

# **Haier SERVICE MANUAL**

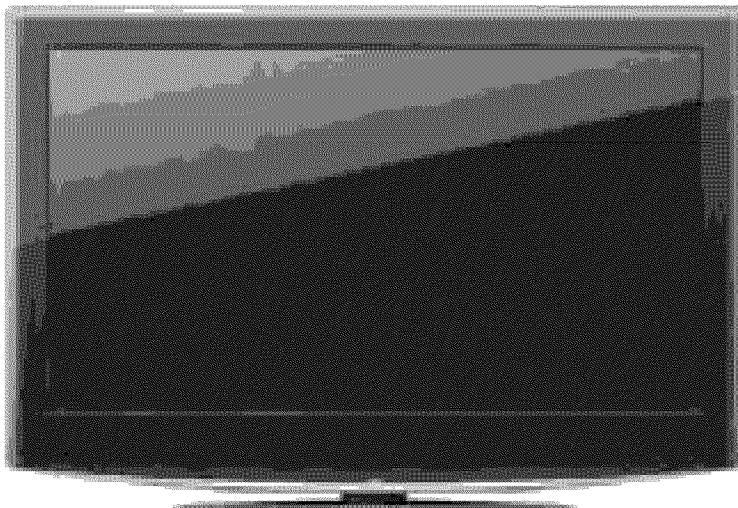
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**COLOR TV**

**Customer Model: HL42XR1**

**Service Model: HL42XR1a**

**CHASSIS: MTK5380L**



## **WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicians. Any attempt to service or repair the product dealt with in this service information by anyone else could result in serious injury or death.

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# 1. General Information

## 1-1 General Guidelines

When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.

After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.

After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

- 1) Leakage Current Cold Check
- 2) Leakage Current Hot Check
- 3) Prevention of Electro Static Discharge(ESD) to Electrostatically Sensitive

## 1-2 Important notice

### 1-2-1. Follow the regulations and warnings

Most important thing is to list up the potential hazard or risk for the service personnel to open the units and disassemble the units. For example, we need to describe properly how to avoid the possibility to get electrical shock from the live power supply or charged electrical parts (even the power is off).

This symbol indicates that high voltage is present inside. It is dangerous to make any kind of contact with any inside part of this product.



This symbol indicates that there are important operating and maintenance instructions in the literature accompanying the appliance

### 1-2-2. Be careful to the electrical shock

To prevent damage which might result in electric shock or fire, do not expose this TV set to rain or excessive moisture. This TV must not be exposed to dripping or splashing water, and objects

Filled with liquid, such as vases, must not be placed on top of or above the TV

### 1-2-3. Electro static discharge (ESD)

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such Components commonly are called Electrostatically Sensitive (ES) Devices. The following techniques should be used to help reduce the incidence of component damage caused by electro Static discharge (ESD).

### 1-2-4. About lead free solder (PbF)

This product is manufactured using lead-free solder as a part of a movement within the consumer products industry at large to be environmentally responsible. Lead-free solder must be used in the servicing and repair of this product.

### 1-2-5. Use the genuine parts (specified parts)

Special parts which have purposes of fire retardant (resistors), high-quality sound (capacitors), low noise (resistors), etc. are used.

When replacing any of components, be sure to use only manufacturer's specified parts shown in the parts list.

### Safety Component

- Components identified by      mark have special characteristics important for safety.



## 1-2-6. Safety Check after Repairment

Confirm that the screws ,parts and wiring which were removed in order to service are put in the original positions, or whether there are the portions which are deteriorated around the serviced places serviced or not. Check the insulation between the antenna terminal or external metal and the AC cord plug blades. And be sure the safety of that.

### Insuration Test

1. Unplug the plug from the AC outlet.
  2. Remove the antenna terminal on TV and turn on the TV.
  3. Insulation resistance between the cord plug terminals and the eternal exposure metal should be more than M ohm by using the 500V insulation resistance meter
  4. If the insulation resistance is less than M ohm, the inspection repair should be required. If you have not the 500V insulation resistance meter, use a Tester.
- External exposure metal: Antenna terminal Headphone jack

## 1-2-7. Ordering Spare Parts

Please include the following informations when you order parts. (Particularly the Version letter)

1. Model number and Version letter  
The model number can be found on the back of each product and the Version letter can be found at the end of the serial number.
2. Part No. and Description  
You can find them in your service manual

## 1-2-8. Photo used in this manual

The illustration and photos used in this Manual may not base on the final design of products, which may differ from your products in some way.

## 1-3. How to read this Service Manual

### 1-4-1. Using Icons

Icons are used to attract the attention of the reader to specific information. The meaning of each icon is described in the table below:



A “note” provides information that is not indispensable, but may nevertheless be valuable to the reader, such as tips and tricks.

**Caution:**

A “caution” is used when there is danger that the reader, through incorrect manipulation,



may damage equipment, loose data, get an unexpected result or has to restart(part of) a procedure.

**Warning:**



A “warning” is used when there is danger of personal injury.

**Reference:**

A “reference” guides the reader to other places in this binder or in this manual, where he/she will find additional information on a specific topic.

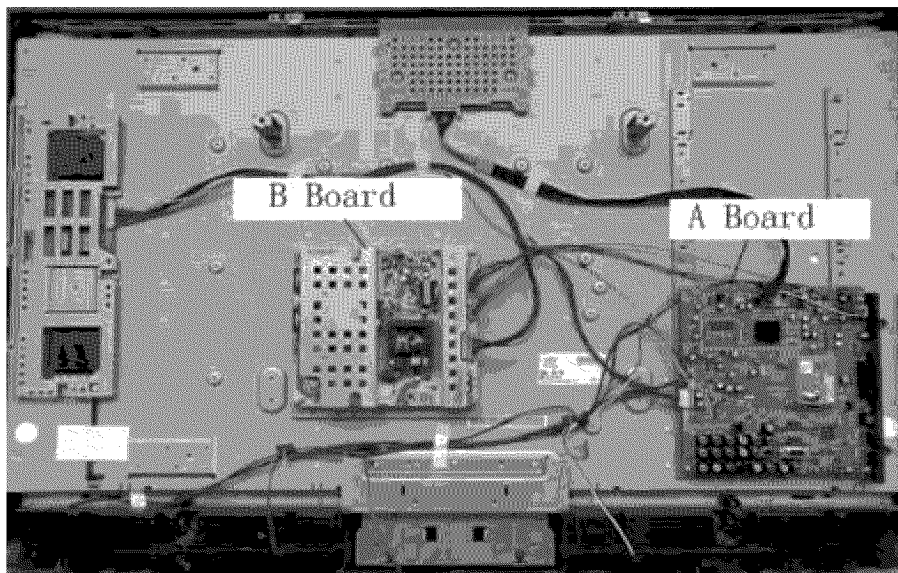


## 2. Specification

Model	LA42R1
Screen size	42inch
Aspect ratio	16:9
Resolution	1920×1080
Contrast Ratio	1300:1
Angel of view	H:178/V:178
Color display	16.7M
OSD language	English
Color system	ATSC/NTSC
Audio system	DK,BG,I, LL'
Audio output power(Built-in)(W)	10W×2
Audio output power(outer)(W)	No
Total power input (W)	215W
Voltage range (V)	120V±10% V
Power frequency (Hz)	60HZ
Time of sleep timer(MINS)	240Min
Net weight(KG)	27.5
Gross weight(KG)	32
Net dimension(MM)	1020/290/724
Packaged dimension(MM)	1110/360/795

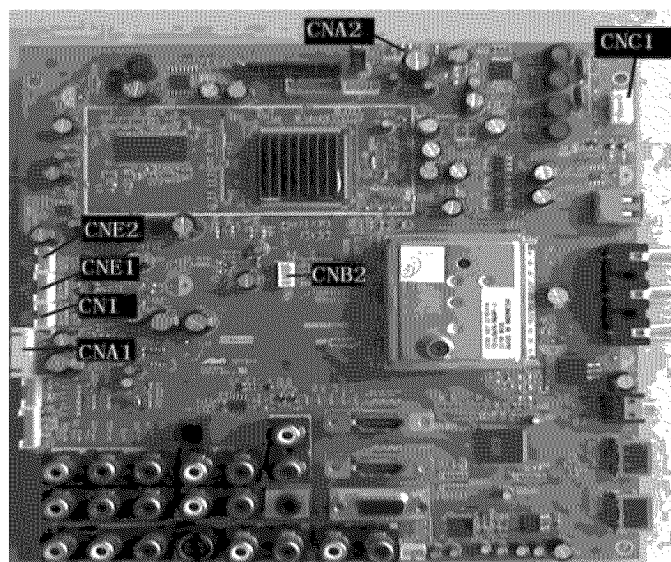
## 3. LOCATION OF CONTROLS AND COMPONENTS

### 3-1 Board Location



No.	Parts number	Description
A Board		Main Board
B Board		Power Board

### 3-2 Main Board & AV Board



#### 3-2-1 Function Description:

##### Main Board:

Process signal which incept from exterior equipment, then translate into signal that panel can display.

#### 3-2-2 Connector definition

Main board connector

**Power connectors (CNA1)**

Pin number	Signal number
1	SW
2	GND
3	+5VSB
4	GND
5	GND
6	+12V
7	+12V

**Notes:**

CNA1-Pin1: System power on / standby

System board will use this pin to control system power.

**CN1**

Pin number	Signal number
1	Dimming
2	ON/OFF
3	GND
4	SELECT(NC)

**Notes:**

CN1-Pin2: Backlight on/off

The system can turn on or turn off the backlight of TFT LCD Panel through the power supply unit path.

CN1-Pin1: Control the luminance of backlight.

The system can generate the PWN signal to control the strength of TFT LCD Panel's backlight through this connector.

CNA2

Pin number	Signal number
1	+24V/16.5V
2	+24V/16.5V
3	GND
4	GND

**Remote connector(CNE1)**

Pin number	Signal number
1	+5VSB
2	IR_IN
3	LED_RED
4	LED_GRE
5	GND

**Keypad connector(CNE2)**

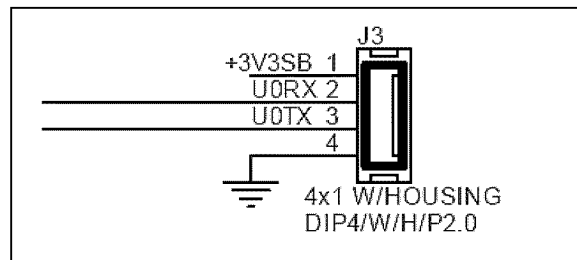
Pin number	Signal number
1	GND
2	ADIN1-K0
3	ADIN2-K1

### Speaker connector(CNC1)

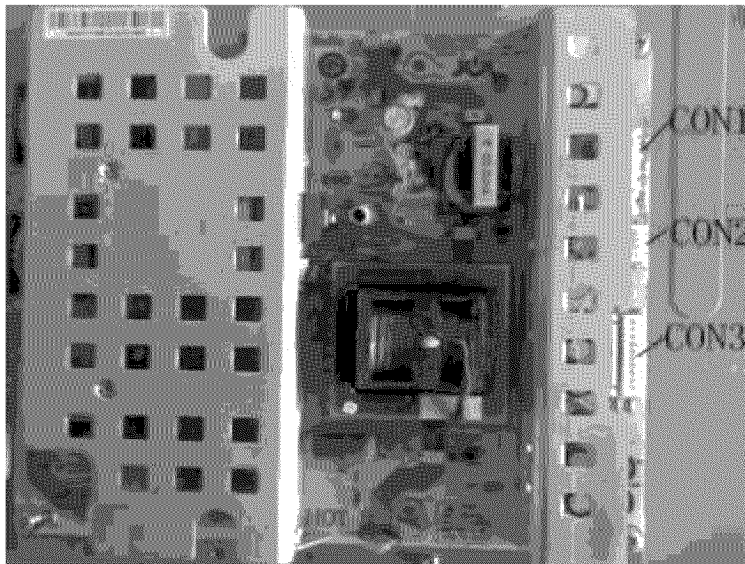
Pin number	Signal number
1	SPEA_L+
2	SPEA_L-
3	SPEA_R_
4	SPEA_R+

### Other connectors:

CNB2 to Upgrade the program of MTK5380L (U13) AND FLASH (U17)



## 3-3. Power Board



### 3-3-1 Function Description:

Supply power for Main board, Panel.

### 3-3-2 Connector definition

#### CON3

Pin#	Signal
1	GND
2	GND
3	GND
4	GND
5	GND
6	24V
7	24V
8	24V
9	24V
10	24V

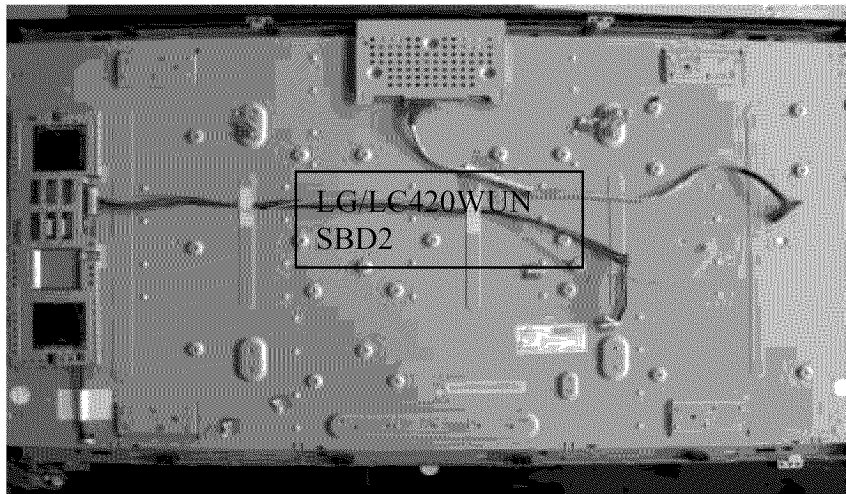
# **CON1**

Pin#	Signal
1	12V
2	12V
3	GND
4	GND
5	5VSB
6	GND
7	ON/OFF

# **CON2**

Pin#	Signal
1	GND
2	GND
3	24V
4	24V

### 3-4. LCD Panel



**3-4-1 Function Description:** Display the signal.

#### 3-4-2 Connector definition

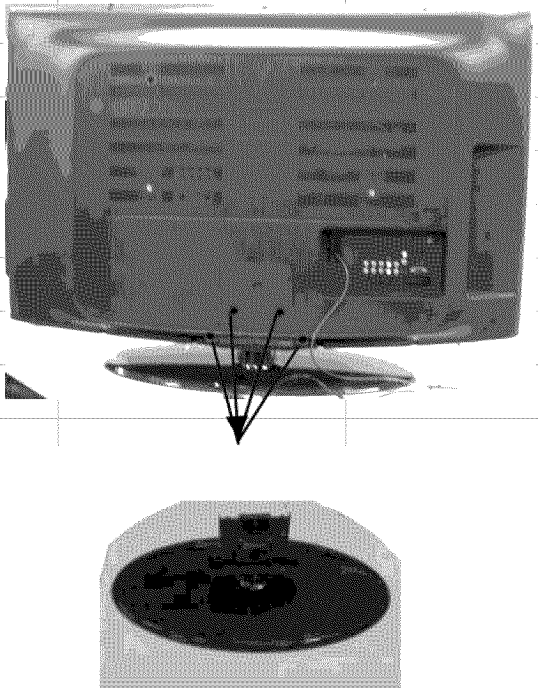
No	Symbol	Description
1	GND	Ground
2	NC	No Connection
3	NC	No Connection
4	NC	No Connection
5	NC	No Connection
6	NC	No Connection
7	LVDS Select	'H' = JEIDA , 'L' or NC = VESA
8	VBR EXT	External VBR (From System)
9	OPC OUT	OPC output (From LCM)
10	OPC Enable	'H' = Enable , 'L' or NC = Disable
11	GND	Ground
12	R1AN	FIRST LVDS Receiver Signal (A-)
13	R1AP	FIRST LVDS Receiver Signal (A+)
14	R1BN	FIRST LVDS Receiver Signal (B-)
15	R1BP	FIRST LVDS Receiver Signal (B+)
16	R1CN	FIRST LVDS Receiver Signal (C-)
17	R1CP	FIRST LVDS Receiver Signal (C+)
18	GND	Ground
19	R1CLKN	FIRST LVDS Receiver Clock Signal(-)
20	R1CLKP	FIRST LVDS Receiver Clock Signal(+)
21	GND	Ground
22	R1DN	FIRST LVDS Receiver Signal (D-)
23	R1DP	FIRST LVDS Receiver Signal (D+)
24	R1EN	FIRST LVDS Receiver Signal (E-)
25	R1EP	FIRST LVDS Receiver Signal (E+)
26	Reserved	No connection or GND

No	Symbol	Description
27	Bit Select	'H' or NC= 10bit(D) , 'L' = 8bit
28	R2AN	SECOND LVDS Receiver Signal (A-)
29	R2AP	SECOND LVDS Receiver Signal (A+)
30	R2BN	SECOND LVDS Receiver Signal (B-)
31	R2BP	SECOND LVDS Receiver Signal (B+)
32	R2CN	SECOND LVDS Receiver Signal (C-)
33	R2CP	SECOND LVDS Receiver Signal (C+)
34	GND	Ground
35	R2CLKN	SECOND LVDS Receiver Clock Signal(-)
36	R2CLKP	SECOND LVDS Receiver Clock Signal(+)
37	GND	Ground
38	R2DN	SECOND LVDS Receiver Signal (D-)
39	R2DP	SECOND LVDS Receiver Signal (D+)
40	R2EN	SECOND LVDS Receiver Signal (E-)
41	R2EP	SECOND LVDS Receiver Signal (E+)
42	Reserved	No connection or GND
43	Reserved	No connection or GND
44	GND	Ground
45	GND	Ground
46	GND	Ground
47	NC	No connection
48	VLCD	Power Supply +12.0V
49	VLCD	Power Supply +12.0V
50	VLCD	Power Supply +12.0V
51	VLCD	Power Supply +12.0V
-	-	-

#### 4.Disassemble and assemble

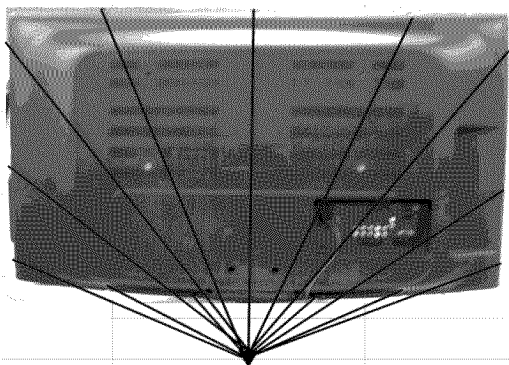


#### 4-1 Remove the Pedestal



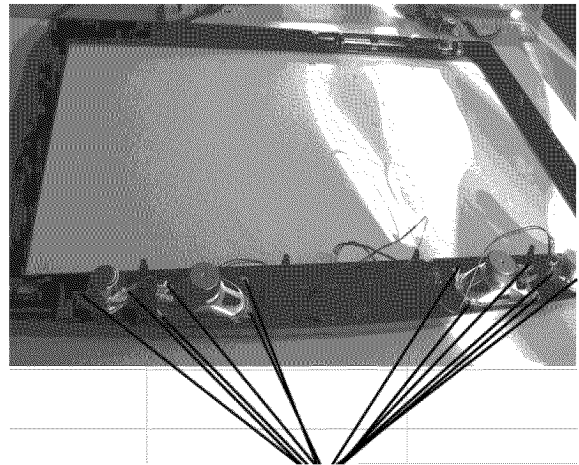
- ① Lay down the unit so that rear cover faces upward
- ② Remove the four screw from the rear cover indicated with red line.
- ③ Then remove the pedestal

#### 4-2 Remove the Back Cover



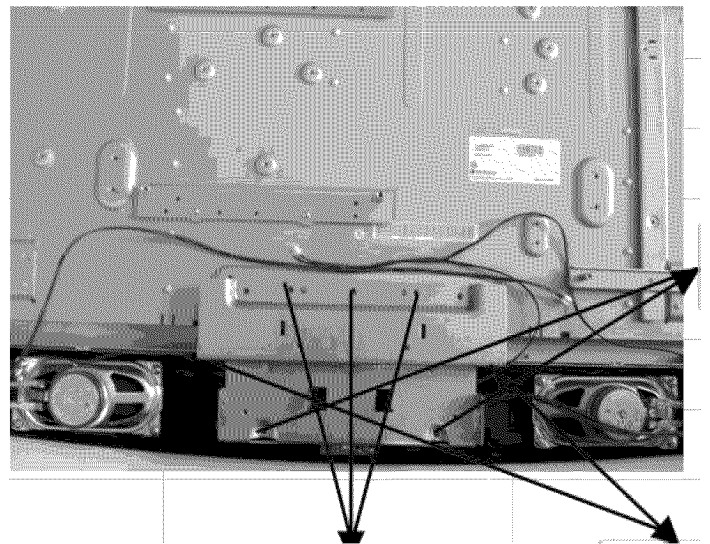
- ① Remove the seventeen screw indicated on figure above by red line.
- ② Then remove the back cover from the unit.

#### 4-3. Remove the speaker



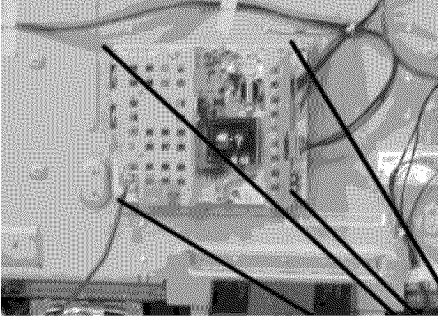
Remove the two screw from the speaker indicated on figure above by red line.

#### 4-4 Remove the Terminal Bracket



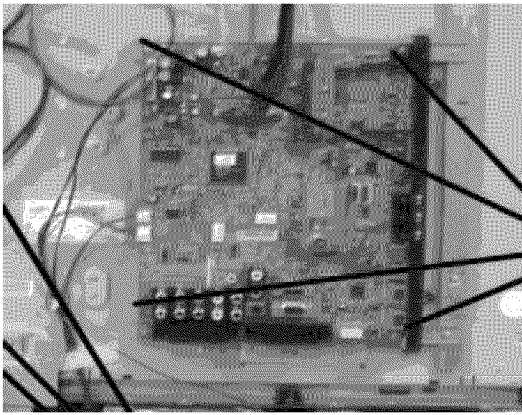
- ① Remove the six screw indicated on the figure above by red line.
- ② Then put the terminal bracket to the side

#### 4-5 Remove the power module



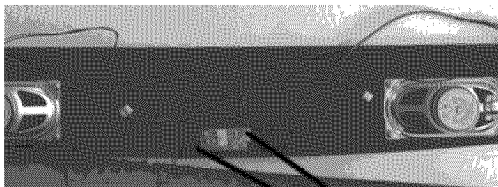
- ① Remove the four screw indicated on the figure above by the red line.
- ② Then remove the power module

#### 4-6 Remove the Main board



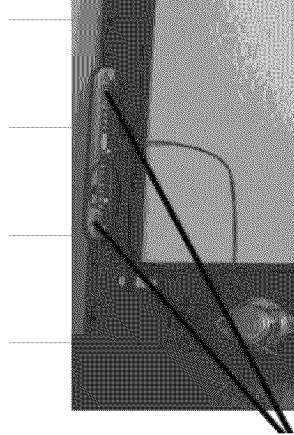
- ① Remove the eight screw indicated on the figure above by the red line.
- ② Remove the Main board

#### 4-7 Remove the remote control



Remove the one screw, take out the remote control board

#### 4-8 Remove the keypad control

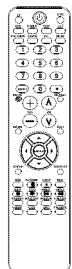


- ① Remove the two screw indicated on the figure above by blue line.
- ② Then remove the keypad module.

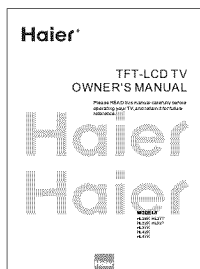
## 5.installation instruction

### External Equipment Connections

#### Accessories



Remote control



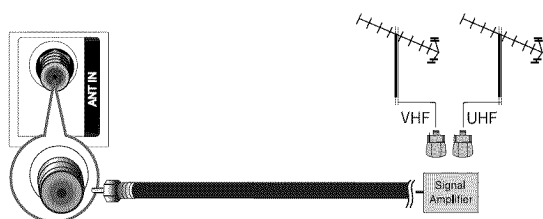
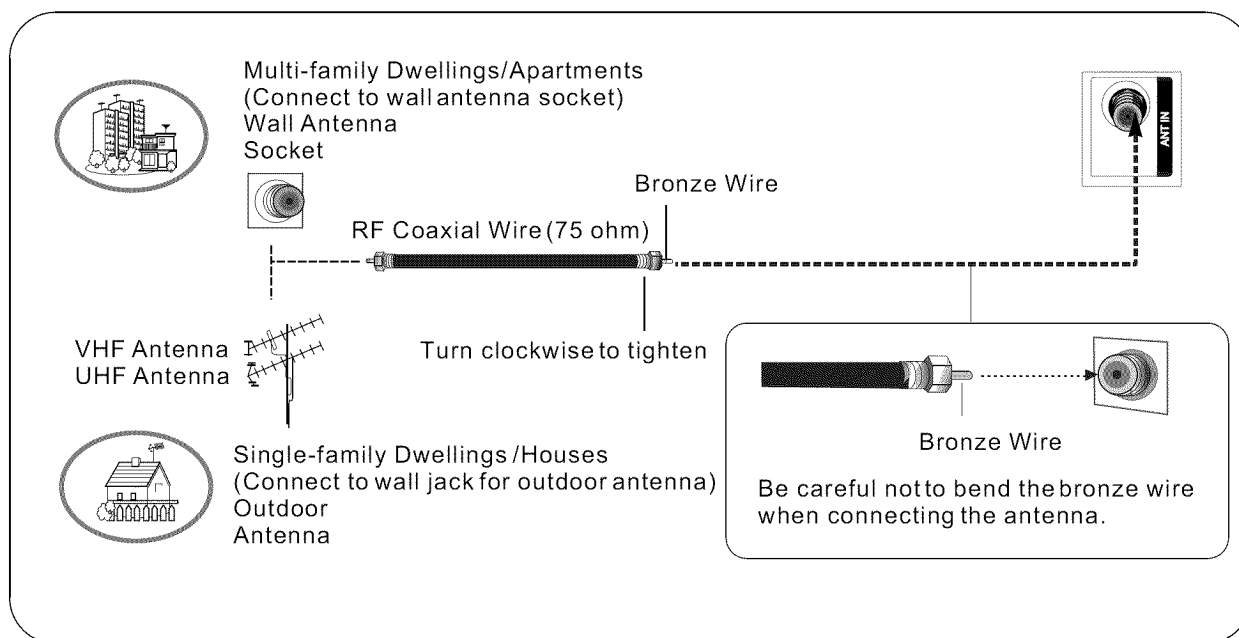
Owner`s manual



Alkaline battery(AAA)×2

### Antenna Connection

Over-the-air TV reception quality will depend on your antenna type, antenna location and antenna positioning.



- To improve the picture quality in a poor signal area, please purchase a signal amplifier and install properly.
- If the antenna needs to be split for two TV's, install a "2-Way Signal Splitter" in the connections.
- To install the antenna properly please contact a professional in your area.

## 5.1 External Equipment Connections

**NOTE:** All cables shown are not included with the TV.

### Choose Your Connection

There are several ways to connect your television, depending on the components you want to connect and the quality of the signal you want to achieve. The following are examples of some different ways to connect your TV with different input sources.

#### Connecting a VCR

To avoid picture noise (interference), leave an adequate distance between the VCR and TV.

##### Connection Option 1

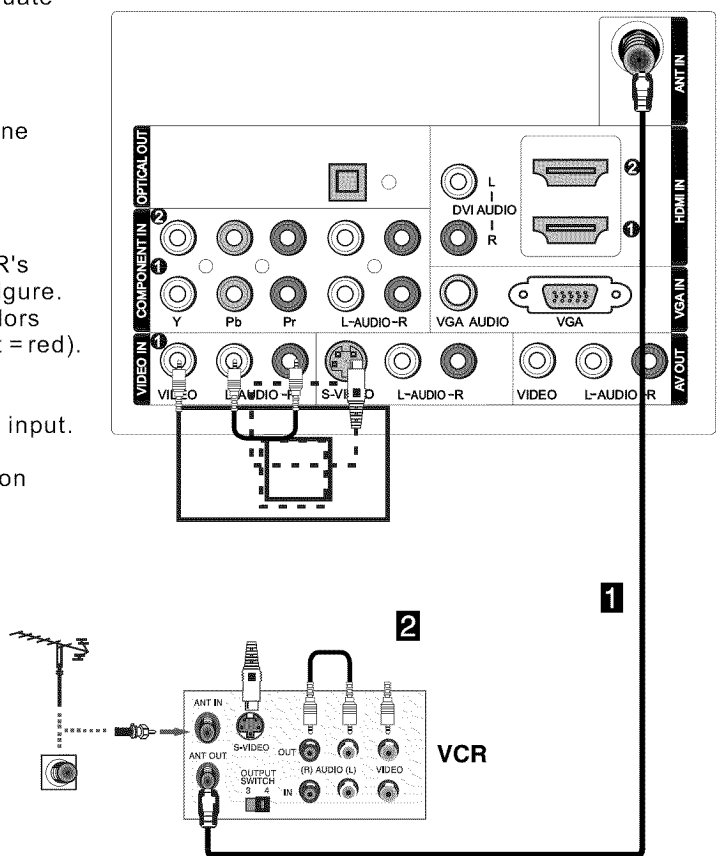
Set VCR output switch to channel 3 or 4 and then tune the TV to the same channel number.

##### Connection Option 2

1. Connect the audio and video cables from the VCR's output jacks to the TV input jacks, as shown in the figure. When connecting the TV to VCR, match the jack colors (Video = yellow, Audio Left = white, and Audio Right = red). If you connect a S-VIDEO output from VCR to the S-VIDEO input, the picture quality is improved; compared to connecting a regular VCR to the Video input.

2. Insert a video tape into the VCR and press PLAY on the VCR. (Refer to the VCR owner's manual.)

3. Select the input source with using the **INPUT** button on the remote control, and then press **▲ / ▼** button to select the source, press **ENTER** button to confirm.



## External A/V Source Setup

### How to connect

Connect the audio and video cables from the external equipment's output jacks to the TV input jacks, as shown in the figure.  
When connecting the TV to external equipment, match the jack colors (Video = yellow, Audio Left = white, and Audio Right = red).

### How to use

1. Select the input source with using the INPUT button on the remote control.
2. Press ▲ / ▼ button to select the desired source.
3. Press **ENTER** button to confirm.
4. Operate the corresponding external equipment.

## Connecting a DVD player

### How to connect

1. Connect the DVD video outputs (COMPONENT) to the YPbPr jacks on the TV and connect the DVD audio outputs to the YPbPr Audio IN jacks on the TV, as shown in the figure.
2. If your DVD only has an S-VIDEO output jack, connect this to the S-VIDEO input on the TV, as shown in the figure.

### Note

If your DVD player does not have component video output, use S-Video.

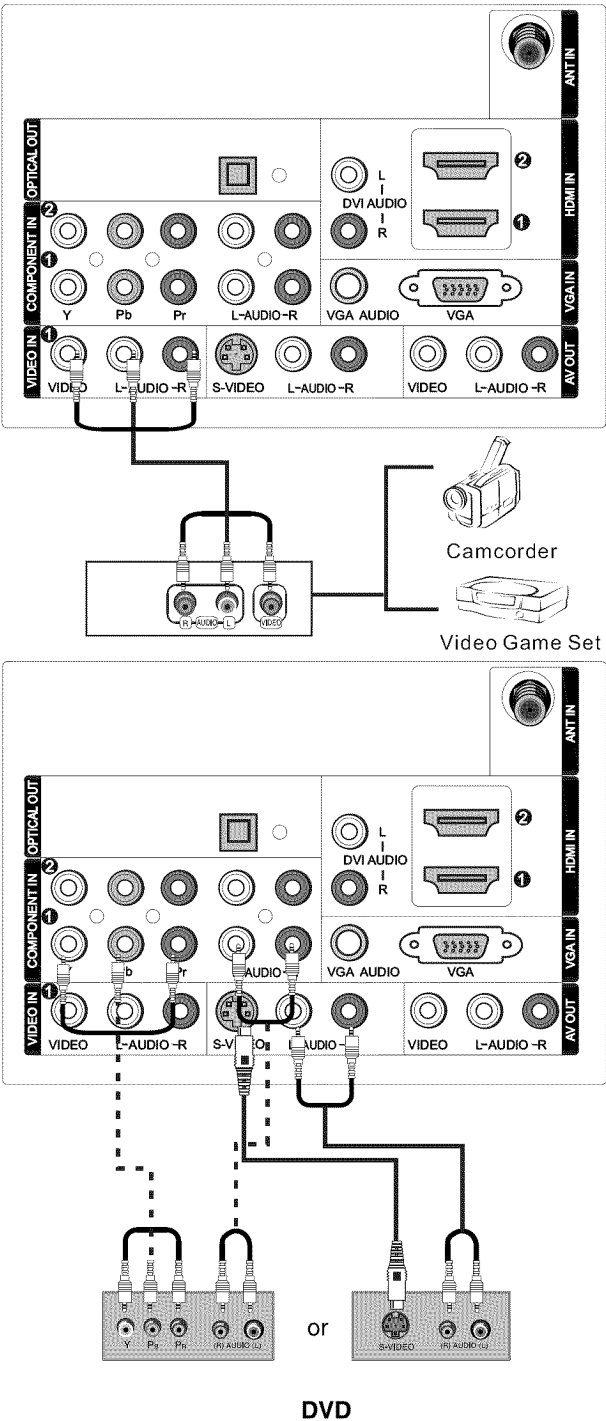
### How to use

1. Turn on the DVD player, insert a DVD.
2. Use INPUT button on the remote control to select component mode.
3. Press Play button on external equipment for program play.
4. Refer to the DVD player's manual for operating instructions.

### ■ Component Input ports

To get better picture quality, connect a DVD player to the component input ports as shown below.

Component ports on the TV	Y	Pb	Pr
Video output ports on DVD player	Y	Pb	Pr
	Y	B-Y	R-Y
	Y	Cb	Cr
	Y	P <sub>B</sub>	P <sub>R</sub>



## Connecting a DTV(digital TV)

This TV can receive Digital Over-the-air/Cable signals without an external digital set-top box. However, if you do receive Digital signals from a digital set-top box or other digital external device, refer to the figure as shown below. This TV supports HDCP (High-bandwidth Digital Contents Protection) protocol for Digital Contents (480p, 720p, 1080i).

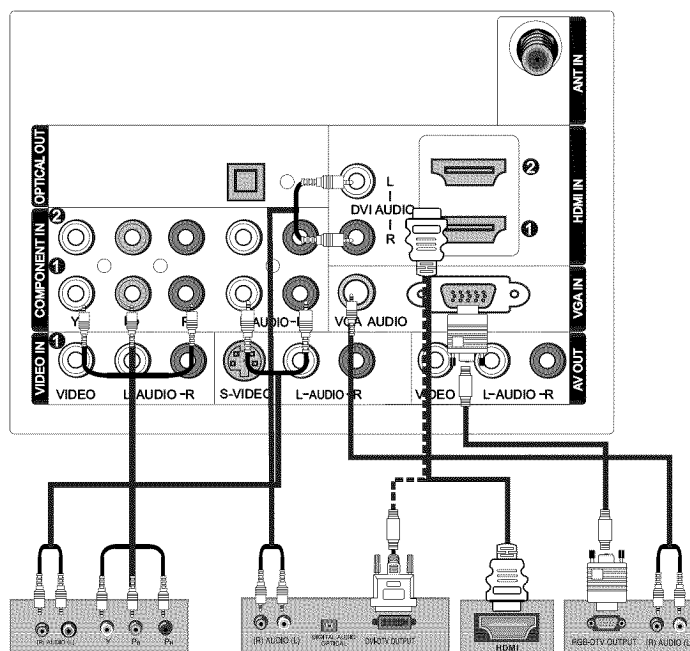
### How to connect

Use the TV's COMPONENT, VGA or HDMI jack for video connections, depending on your set-top box connector. Then, make the corresponding audio connections.

### How to use

1. Turn on the digital set-top box. (Refer to the owner's manual for the digital set-top box.)
2. Use INPUT on the remote control to select COMPONENT, VGA or HDMI source.

Signal	COMPONENT	HDMI
480i	Yes	Yes
480p	Yes	Yes
720p	Yes	Yes
1080i	Yes	Yes
1080p	Yes	Yes



Digital Set-top Box

## Connecting a digital audio output

Send the TV's audio to external audio equipment (stereo system) via the Digital Audio Output (Optical) port.

### How to connect

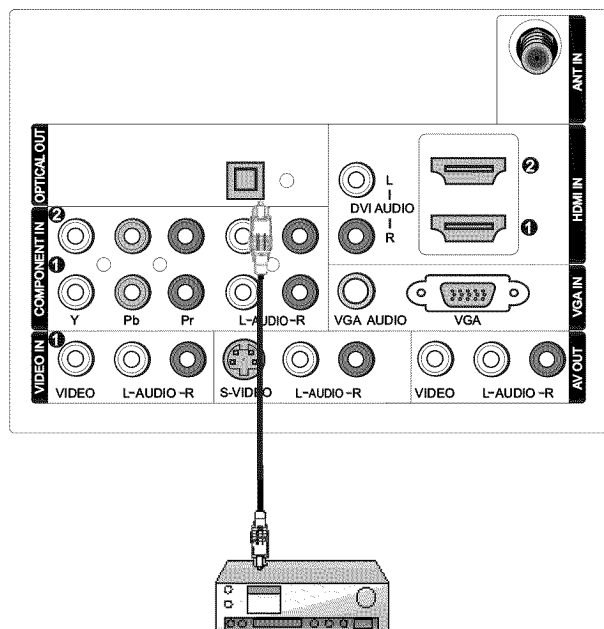
1. Connect one end of an optical cable to the TV Digital Audio(Optical) Output port.
  2. Connect the other end of the optical cable to the digital audio (optical) input on the audio equipment.
- See the external audio equipment instruction manual for operation.

### Note

When connecting with external audio equipments, such as amplifiers or speakers, please turn the TV speakers off.



**Caution:** Do not look into the optical output port. Looking at the laser beam may damage your vision.



## Connecting a computer

### How to connect

1. To get the best picture quality, adjust the VGA graphics card to 1024x768.
2. Use the TV's VGA or DVI (Digital Visual Interface) Audio IN port for audio connections, depending on your computer connector.
  - If the graphic card on the computer does not output analog and digital RGB simultaneously, connect only one of either VGA IN or HDMI IN to display the VGA on the TV.
  - If the graphic card on the computer does output analog and digital RGB simultaneously, set the TV to either VGA or HDMI; (the other mode is set to Plug and Play automatically by the TV.)
3. Then, make the corresponding audio connection. If using a sound card, adjust the VGA sound as required.

### How to use

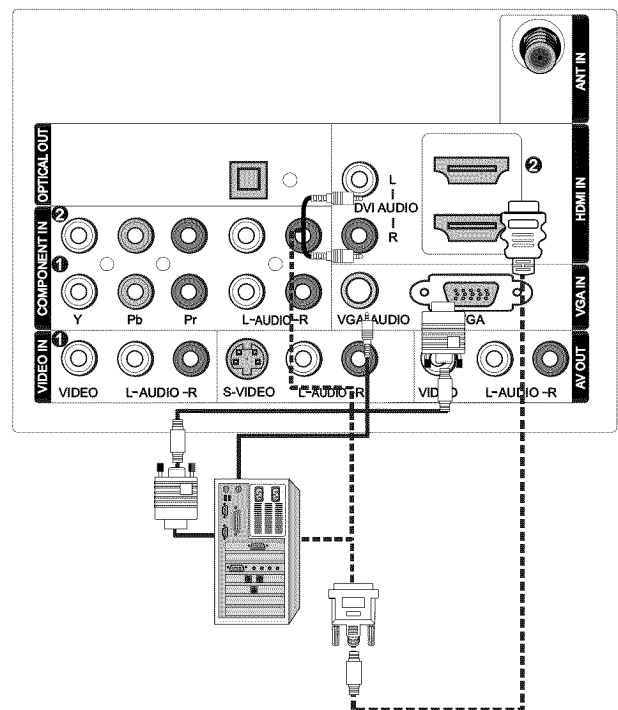
1. Turn on the computer and the TV.
2. Use INPUT on the remote control to select VGA or HDMI source.
3. Check the image on your TV. There may be noise associated with the resolution, vertical pattern, contrast or brightness in VGA mode. If noise is present, change the VGA mode to another resolution, change the refresh rate to another rate or adjust the brightness and contrast on the menu until the picture is clear. If the refresh rate of the VGA graphic card can not be changed, change the VGA graphic card or consult the manufacturer of the VGA graphic card.

### Note

1. Use a DVI cable.
2. Avoid keeping a fixed image on the TV's screen for a long period of time. The fixed image may become permanently imprinted on the screen.
3. The synchronization input form for Horizontal and Vertical frequencies is separate.

### Resolution

Mode	Resolution	Frame frequency (Hz)
VGA	640x480	60Hz
SVGA	800x600	60Hz
		75Hz
XGA	1024x768	60Hz
		75Hz



## 5.2 HDMI and DVI Connection

### When the source device(DVD player or Set Top Box) supports HDMI

#### How To Connect

1. Connect the source device to HDMI port of this TV with an HDMI cable(not supplied with this product).
2. No separated audio connection is necessary.

#### How To Use

If the source device supports Auto HDMI function, the output resolution of the source device will be automatically set to 1280x720p.

If the source device does not support Auto HDMI, you need to set the output resolution appropriately.

To get the best picture quality, adjust the output resolution of the source device to 1280x720p.

Select HDMI input source in input source option of Select Main source menu.

### When the source device(DVD player or Set Top Box) supports DVI

#### How To Connect

1. Connect the source device to HDMI port of this TV with a HDMI-to-DVI cable(not supplied with this product).
2. A separated audio connection is necessary.
3. If the source device has an analog audio output connector, connect the source device audio output to DVI Audio In port located on the left side of HDMI port.

#### How To Use

If the source device supports Auto DVI function, the output resolution of the source device will be automatically set to 1280x720p.

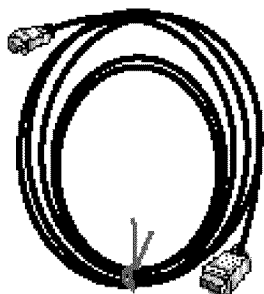
If the source device does not support Auto DVI, you need to set the output resolution appropriately.

To get the best picture quality, adjust the output resolution of the source device to 1280x720p.

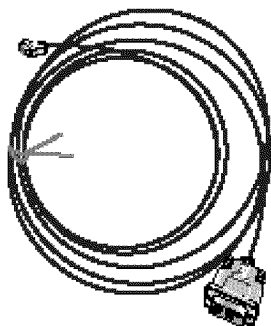
Press the INPUT button to select HDMI input source in input source option of Select Main source menu.



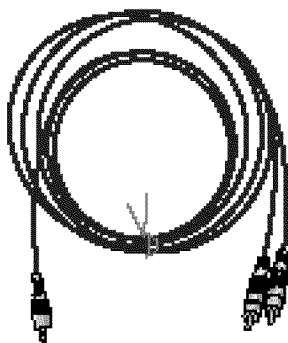
# Cable sample



HDMI Cable  
(not supplied with the product)



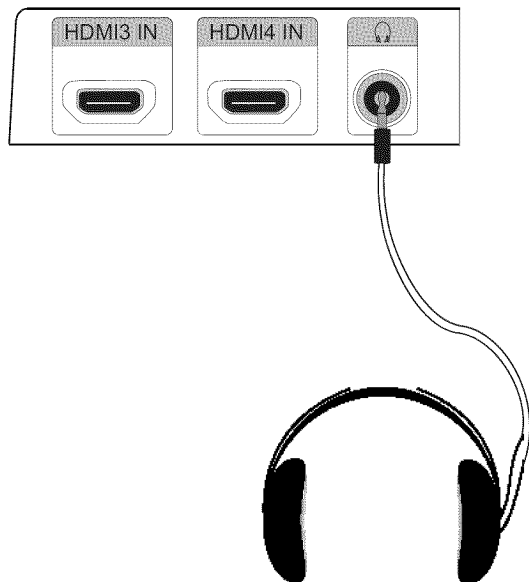
HDMI to DVI Cable  
(not supplied with the product)



Analog Audio Cable  
(Stereo to RCA type)  
(not supplied with the product)

## Connecting Headphones

You can connect a set of headphones to your set if you wish to watch a TV programme without disturbing the other people in the room.

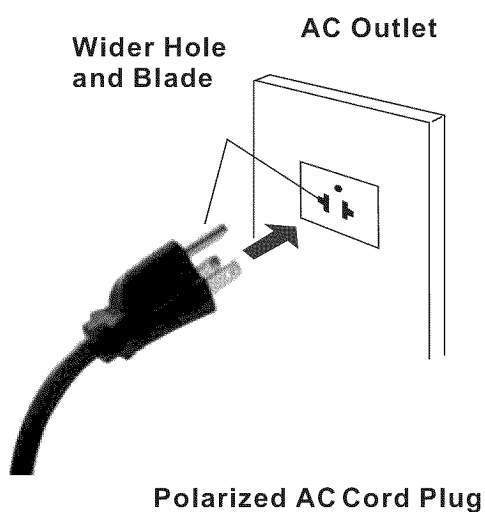


Plug a set of headphones into the 3.5mm mini-jack socket on the side panel of the set.

### Note

- Prolonged use of headphones at a high volume may damage your hearing.
- You will not receive sound from the speakers when you connect headphones to the system.

## Power source



### TO USE AC POWER SOURCE

Use the AC polarized line cord provided for operation on AC. Insert the AC cord plug into a standard polarized AC outlet.

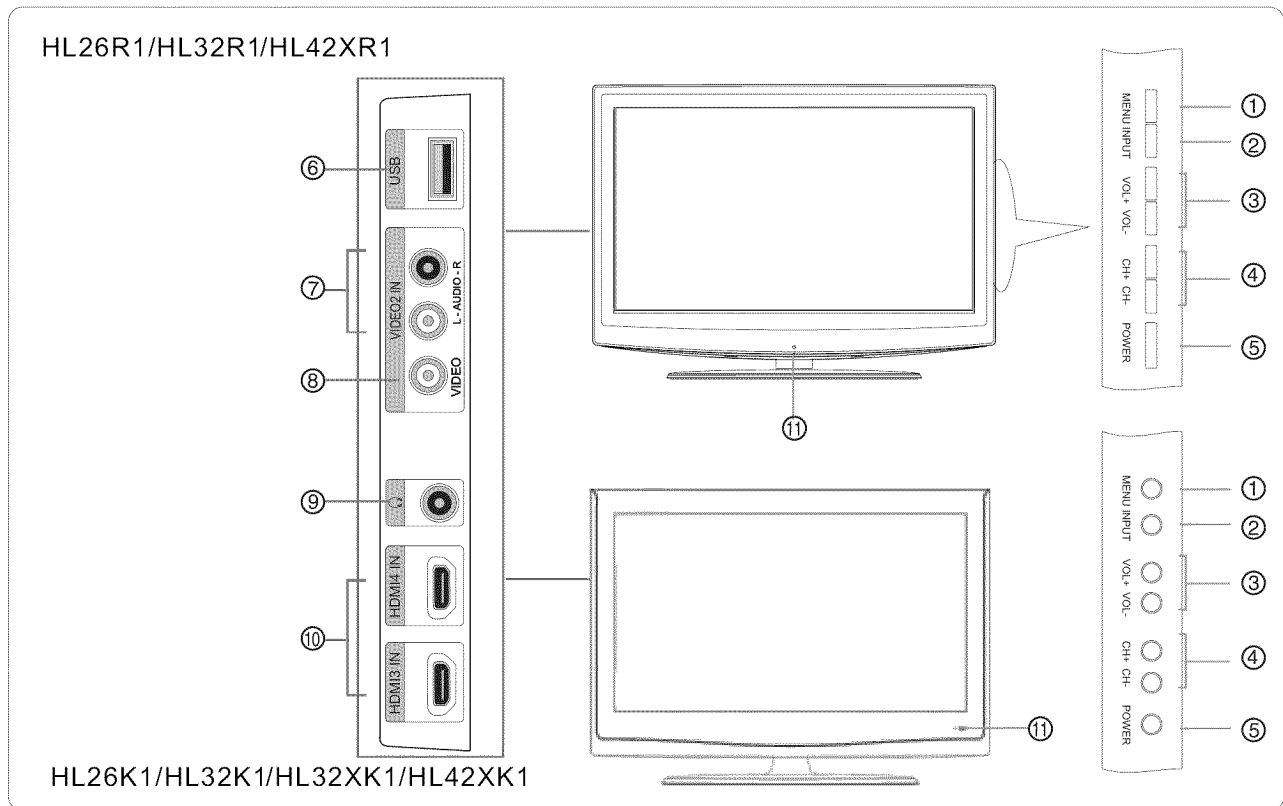
### Note

- Never connect the AC line cord plug to other than the specified voltage. Use the attached power cord only.
- If the polarized AC cord does not fit into a non-polarized AC outlet, do not attempt to file or cut the blade. It is the user's responsibility to have an electrician replace the obsolete outlet.
- If you cause a static discharge when touching the unit and the unit fails to function, simply unplug the unit from the AC outlet and plug it back in. The unit should return to normal operation.

## 6. Operation Instructions

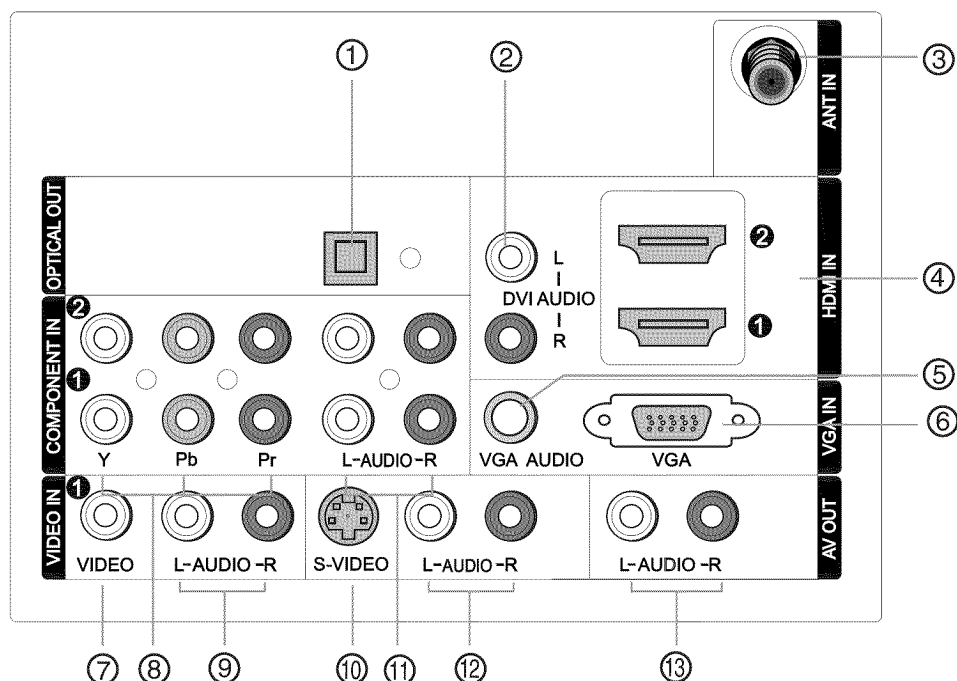
### Basal information

#### 6-1 TV Side panel controls and connections



1. **MENU**: Menu display. Press to access the on-screen menu display
2. **INPUT**: Press to access the input source mode. Press repeatedly to change the source to the one you want to watch. In the MENU screen, the INPUT button serves as the ENTER button.
3. **VOL +/-**: Press to adjust the volume. In the **MENU** screen, these buttons serve as left/right buttons.
4. **CH +/-**: Press to scan through channels. To scan quickly through channels, press and hold down either +/- . In the **MENU** screen, these buttons serve as up/down buttons.
5. **POWER**: Press to turn on and off the TV.
6. **USB input**: Connect a USB flash drive to view JPEG images or listen to MP3 songs.
7. **Av2 AUDIO IN**: Connect the audio L/R cables from the video signal source to these jacks.
8. **AV2 VIDEO IN**: Connects the composite video cable from an external signal source to this jack.
9. **Headphone jack**: Headphone audio output terminal.
10. **HDMI IN**: Connect a HDMI device to receive digital audio and uncompressed digital video signals.
11. **Remote Sensor**: Receives IR signals from the remote control.  
Do not put anything near the sensor, which may block the remote control signal.

## 6-2 Back panel connections



1. **Digital Audio Output:** Connect various types of digital audio equipment.

**NOTE:** In standby mode, these ports will not work.

2. **DVI Audio In:** When using a DVI to HDMI adapter, connect the audio signal to these jacks.

3. **Antenna Input:** Connect cable or antenna signals to the TV, either directly or through your cable box.

4. **HDMI In:** Connect a HDMI device to receive digital audio and uncompressed digital video.

5. **VGA Audio In:** Connect the audio L/R cables from a computer to this jack.

6. **VGA Video In:** Connect a video cable from a computer to this jack.

7. **VIDEO In:** Connects the video signal from a video device.

8. **Component Video In:** Connect a component video device to these jacks.

9. **AUDIO In:** Connect the audio L/R cables from the video signal source to these jacks.

10. **S-VIDEO In:** Connect the S-Video cable from an external signal source to this jacks.

11. **COMPONENT AUDIO In:** Connect the audio L/R cables from the component video signal source to these jacks.

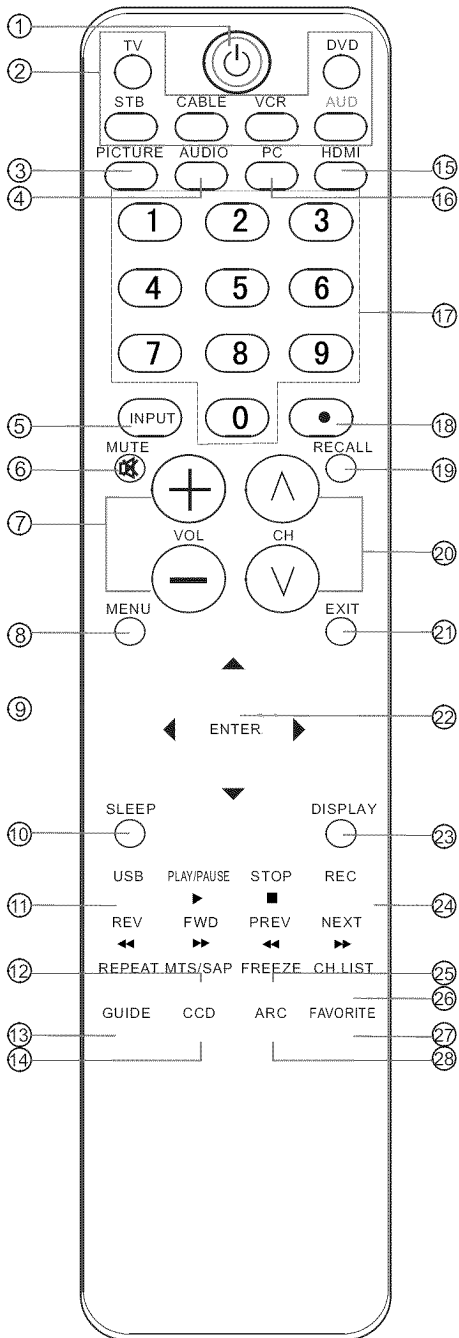
12. **AUDIO In:** Connect the audio L/R cables from the S-Video signal source to these jacks.

13. **AUDIO Out:** Connect the audio L/R cables to your audio equipment.

## 6-3 Setting Up Your Remote Control

The remote control cannot be operated unless the batteries are properly loaded.  
When using the remote control, aim it at the remote sensor on the TV.

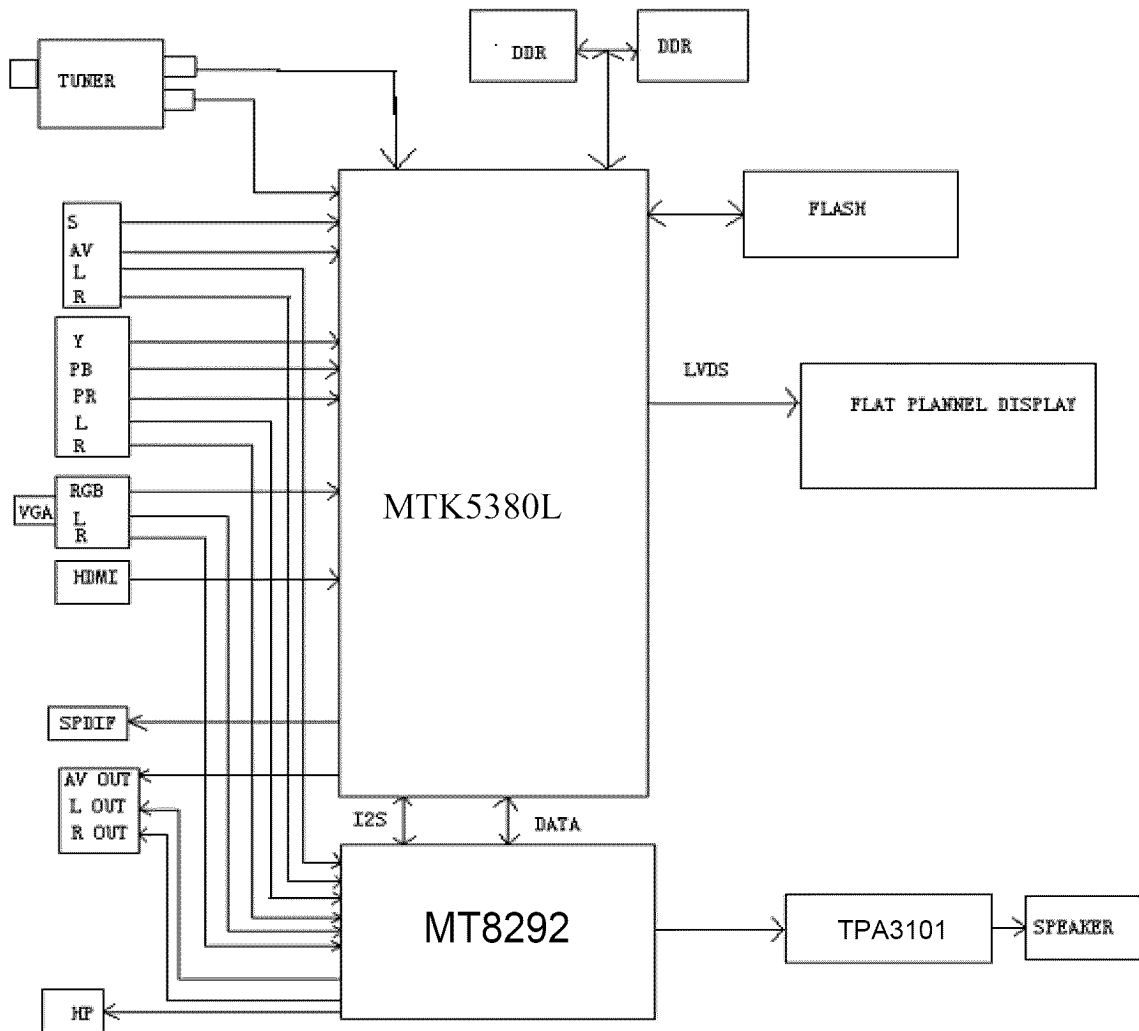
### Function introduction



1. **POWER**  
Press to turn on and off the TV.
2. **TV DVD SETBOX CABLE VCR AUD**  
To select one of the system modes in which the remote control can be used.
3. **PICTURE**  
Press repeatedly to cycle through the available picture modes.
4. **AUDIO**  
Press to cycle through different sound settings.
5. **INPUT**  
Show the input source.
6. **MUTE**  
Switches the video sound on or off.
7. **VOLUME UP/DOWN**  
Press to adjust the volume.
8. **MENU**  
Press to open the on-screen menu.
9. **THUMBSTICK (Up/Down/Left/Right/ENTER)**  
Allows you to navigate the on-screen menus and adjust the system settings to your preference.
10. **SLEEP button**  
Press to display the sleep timer option.
11. **USB**: Press to switch to USB in.
12. **MTS/SAP**  
Selects MTS sound: Mono, Stereo, and SAP in Analog mode. Change the audio language in DTV mode.
13. **GUIDE**  
Press to display the guide when you are watching analog or digital channels.
14. **CCD(closed caption)**  
Select a closed caption.
15. **HDMI**: Press to select a device connected to the HDMI input
16. **PC**: Press to select the computer connected to the VGA input
17. **Number buttons**  
Press to change a channel.
18. **. button**  
Press to select digital channels. For example, to enter "54-3", press "54", ".", and "3".
19. **RECALL**  
Press to jump back and forth between two channels.
20. **CHANNEL UP/DOWN**  
Press to scan through channels. To scan quickly between the last two channels, press and hold down either +/-.
21. **EXIT**  
Clears all on-screen displays and returns to TV viewing from any menu.
22. **ENTER**  
Accesses the highlighted item in the on-screen menu
23. **DISPLAY**  
Press to display the TV status information on the top of the TV screen.
24. **USB Functions**  
Control the USB System.  
◀◀/▶▶ Rewind / Fast ▶▶▶▶ backward / Forward  
■ Stop ▶ Play/Pause ● REC REPEAT Repeat
25. **FREEZE**  
Press once to display a frozen image of the current program, but audio continues. Press again to return to the program.
26. **CH.LIST**  
Open the channel list in TV.
27. **FAV.LIST**  
Press to open the favorite channel list in TV.
28. **ARC(Aspect Ratio Control)**  
Press to change the aspect ratio.

## 7. Electrical parts

### 7-1. Block diagram



### 7-2. Circuit Diagram

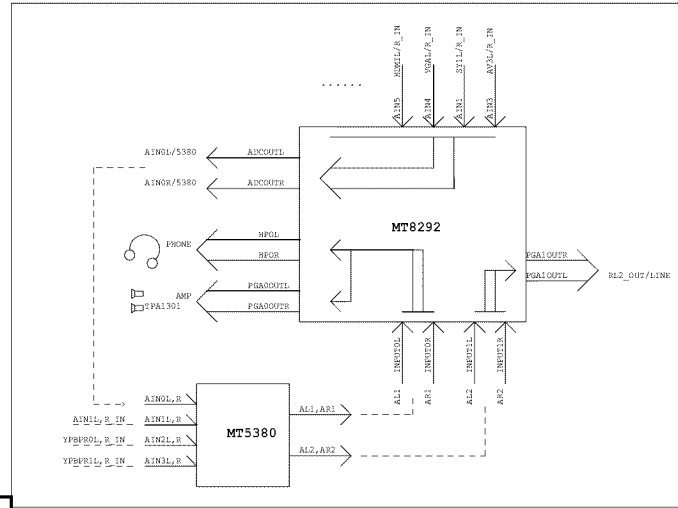
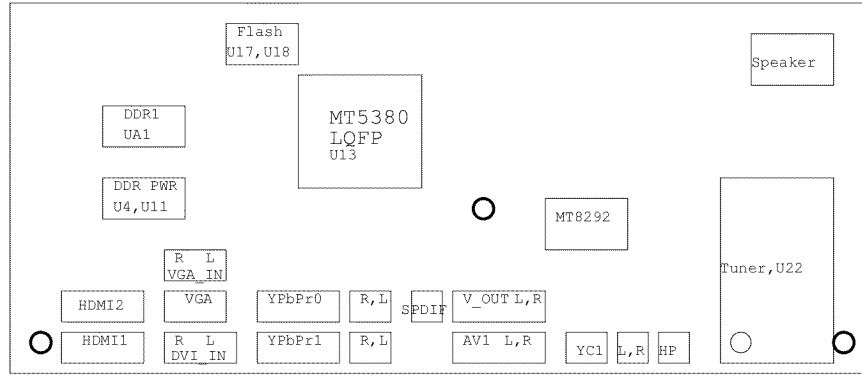
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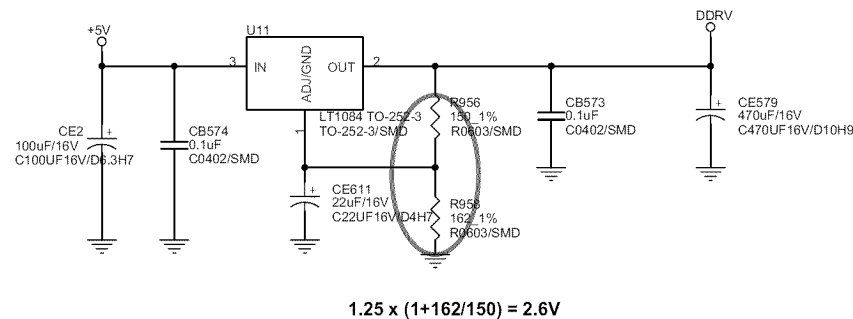
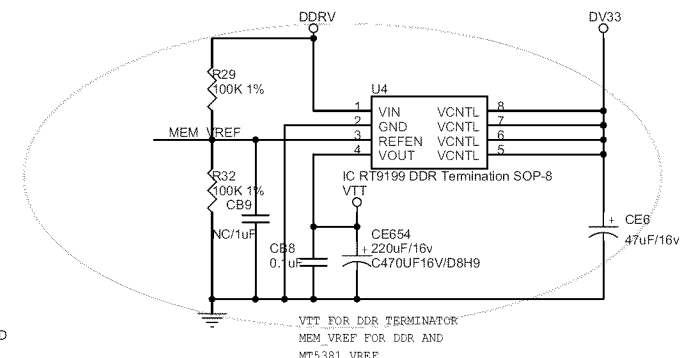
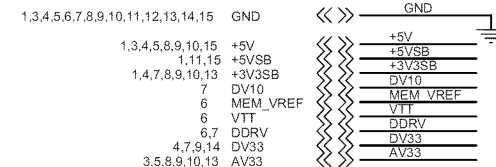
01. INDEX
02. DIGITAL POWER
03. ANALOG POWER
04. PERIPHERAL
05. ANALOG PLL/USB2.0/TUNER
06. DDR1 MEMORY
07. FLASH/JTAG/UART/IR/TRAP
08. HDMI/SPEAKER
09. LVDS/MUTE
10. YPBPR/L/R
11. VGA IN/LR
12. AV IN/LR/CVBSO
13. LINE OUT/HP
14. BACK LIGHT /MAIN POWER

GPIO Definition	
GPIO_0	System EEPROM Write Protect
GPIO_1	Mode#
GPIO_3	HDMI/S1
GPIO_4	Headphone Detect
GPIO_5	Audio Mute Control
GPIO_6	HDMI EEPROM Write Protect
GPIO_7	HDMI HDP
GPIO_8	Speaker Mute
GPIO_9	LVDS Power Control
GPIO_10	LVDS Panel Control(Reserve)
GPIO_11	LVDS Panel Control(Reserve)
GPIO_12	U2RX
GPIO_13	U2TX
OPCTRL0	CEC Function
OPCTRL1	VGA EEPROM Write Protect
OPCTRL2	Back Light Control
OPCTRL3	Unused
OPCTRL4	Trap
OPCTRL5	HDMI/S2
AIN1,2,4	Unused
OPWM0(GPIO 40)	Unused
VCXO(GPIO 67)	Unused

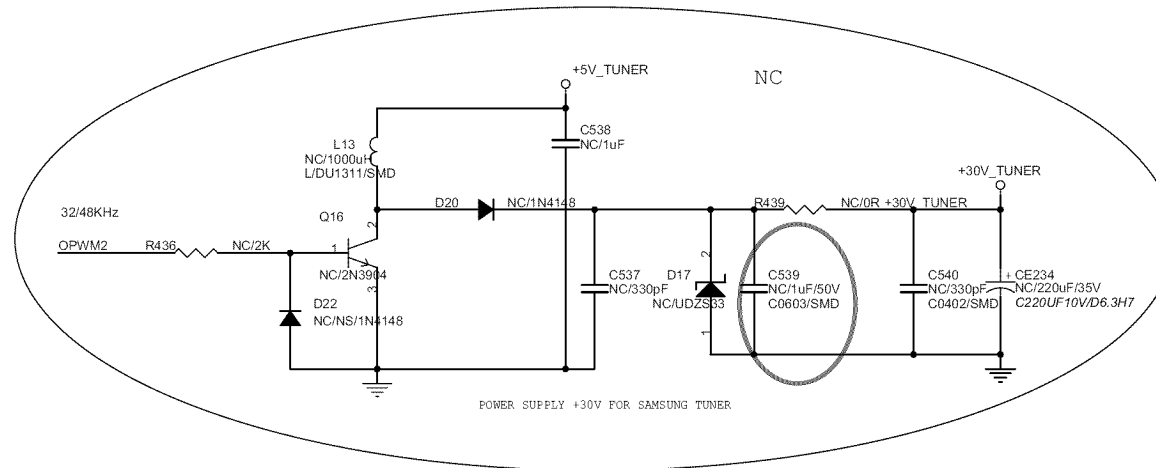
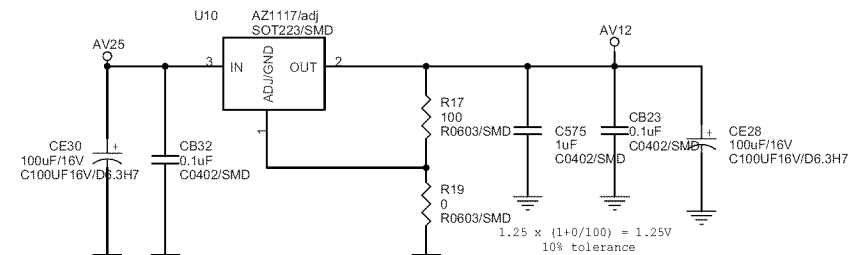
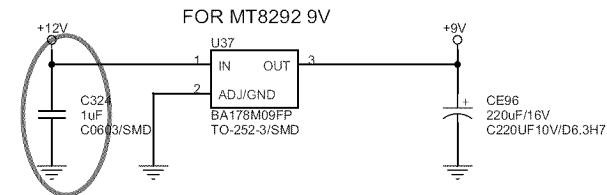
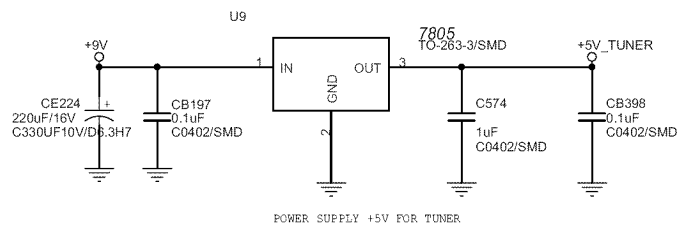
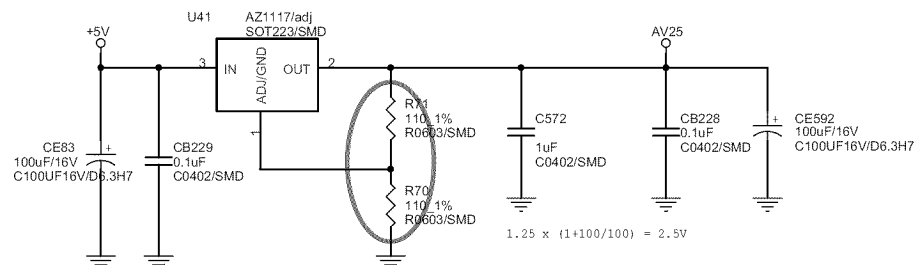
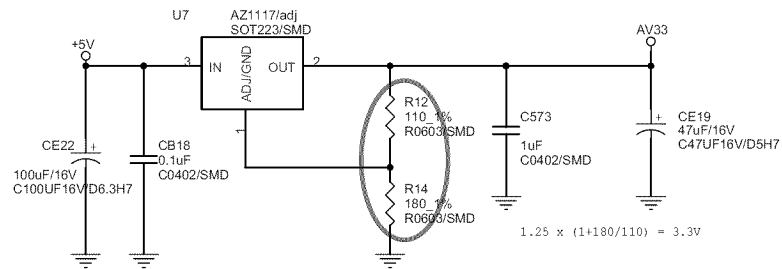
GPIO Definition	
RF_AGC(GPIO 62)	Unused
AIN3_L(GPIO 74)	Unused
AIN3_R(GPIO 75)	Unused

Rev	History	Note	DATE
V1	INITIAL VERSION		2007/04/09
V2	1.Change Vcore Voltage. 2.Add FB for DV33 and AV33 Reserve		
	3. Add R49, R50 for A version IC. 4. Change C20, C21 for crystal capacitors.		2007/06/11
	5.Add DRAM Serial resistors. 6.Add CEC up. 7. Add U16 MT8292		2007/06/11



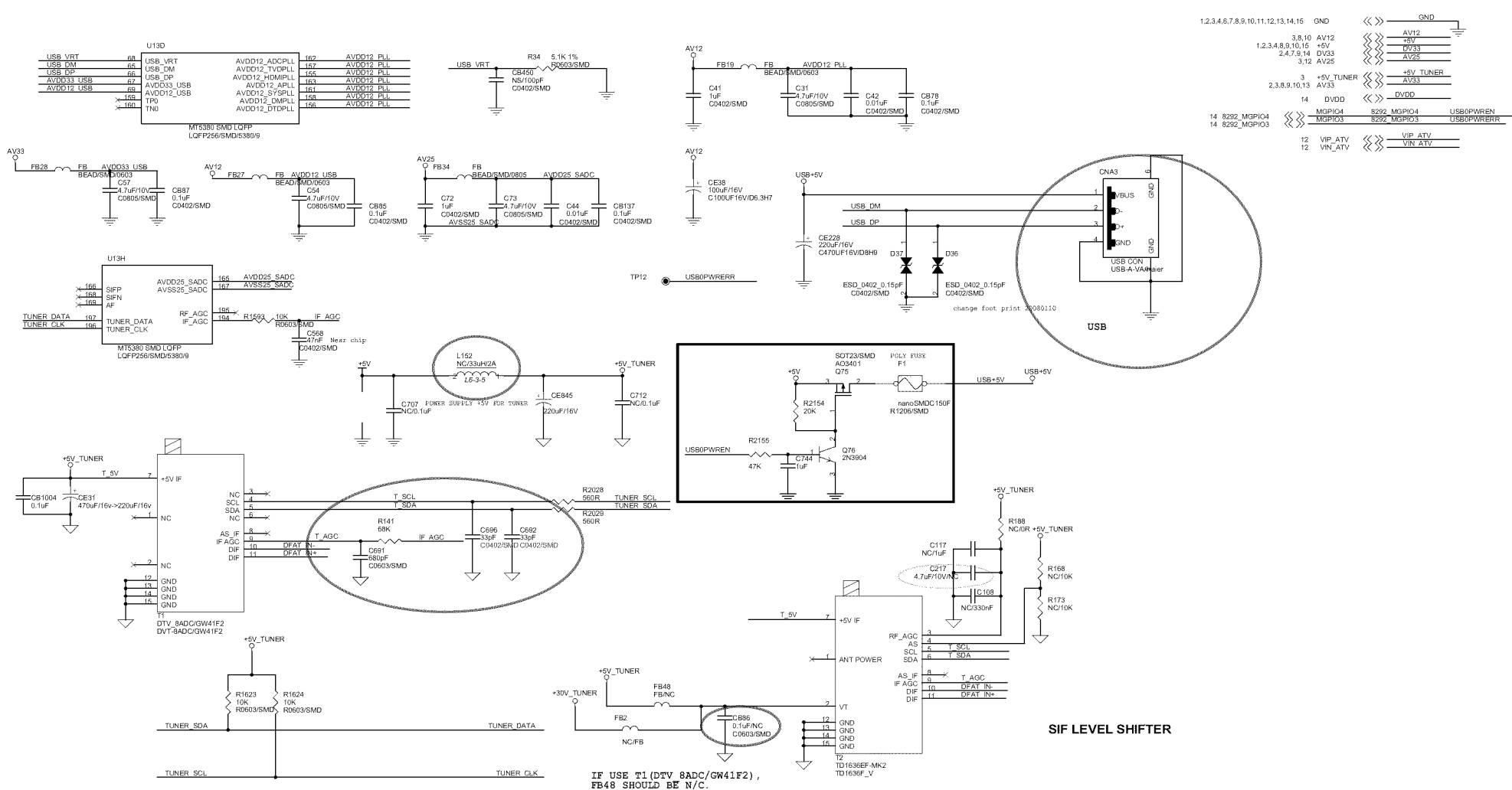






1,2,4,5,6,7,8,9,10,11,12,13,14,15	GND	<< >>	GND
1,2,4,5,8,9,10,15	+5V	<< >>	+5V
2,5,8,9,10,13	AV33	<< >>	AV33
5,8,10	AV12	<< >>	AV12
5	+5V_TUNER	<< >>	+5V_TUNER
5,12	AV25	<< >>	AV25
1,9,15	+12V	<< >>	+12V
14	+9V	<< >>	+9V
4,7	OPWM2	<< >>	OPWM2

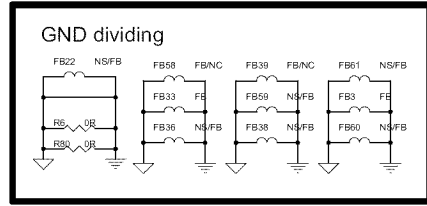
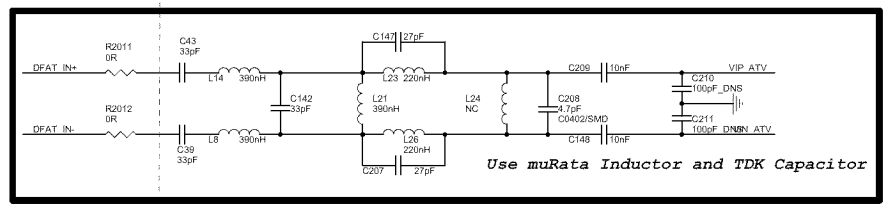


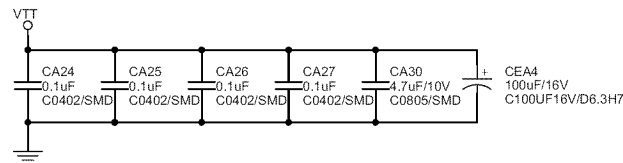
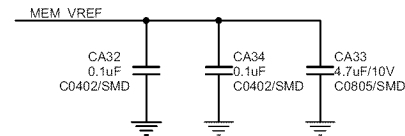
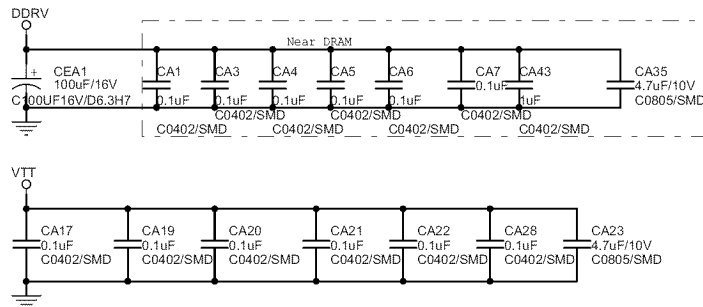
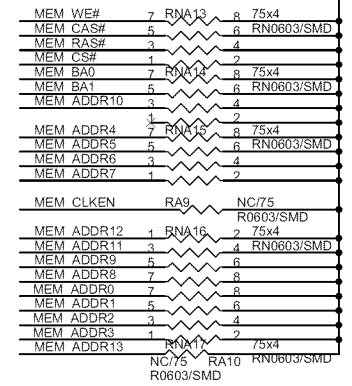
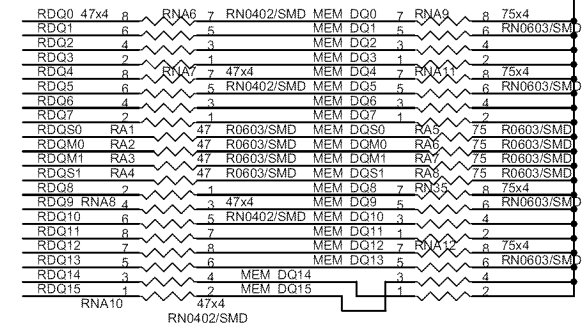
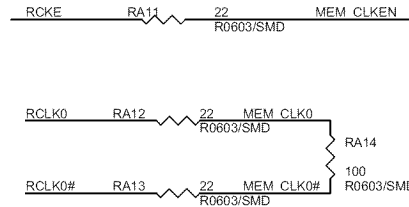
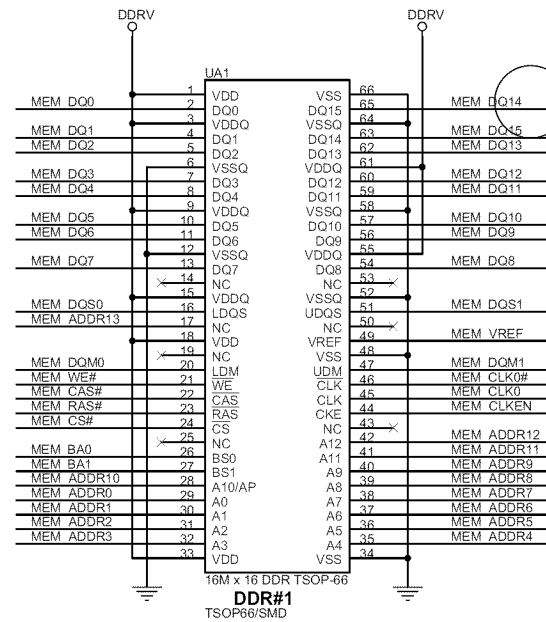
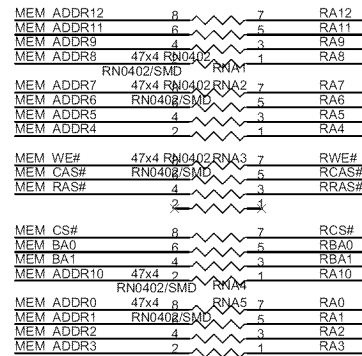
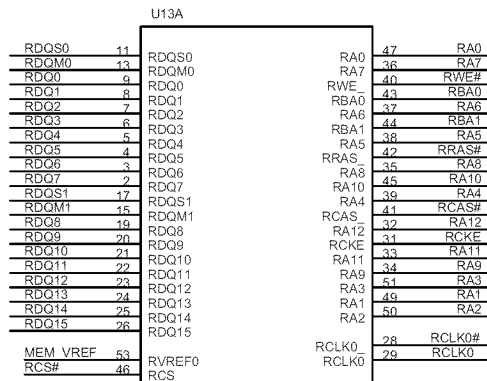


### SIF LEVEL SHIFTER

Near Tuner

Near MT538X

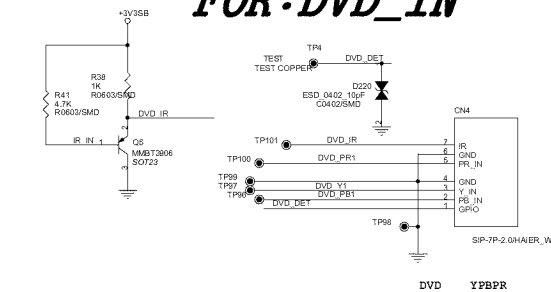
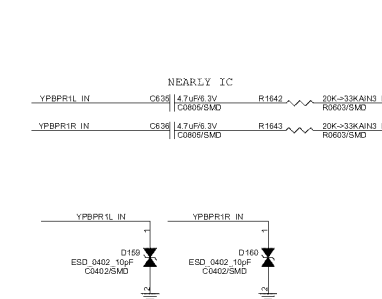
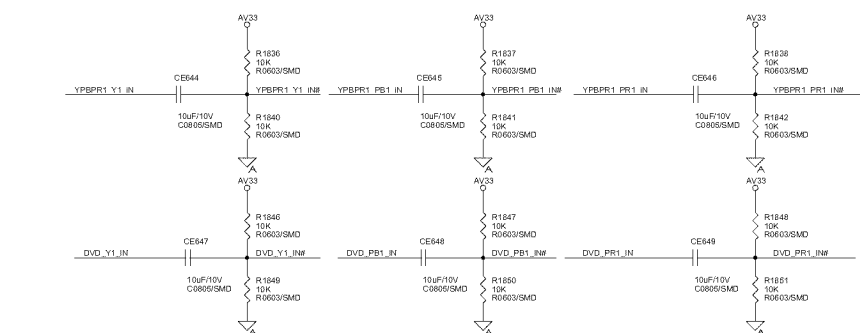




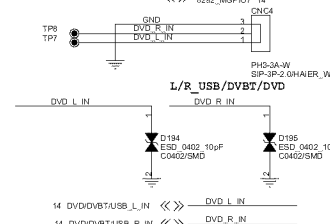






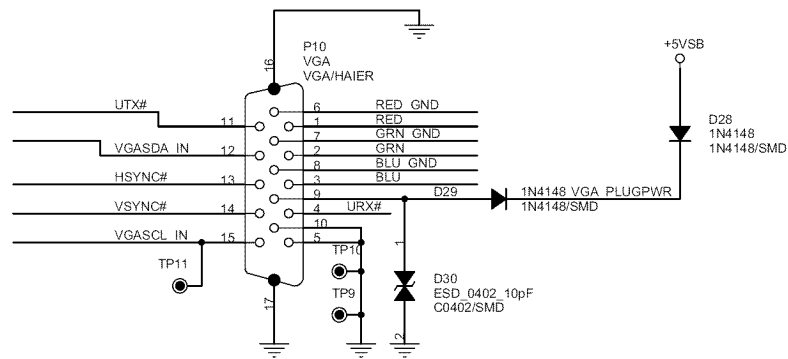


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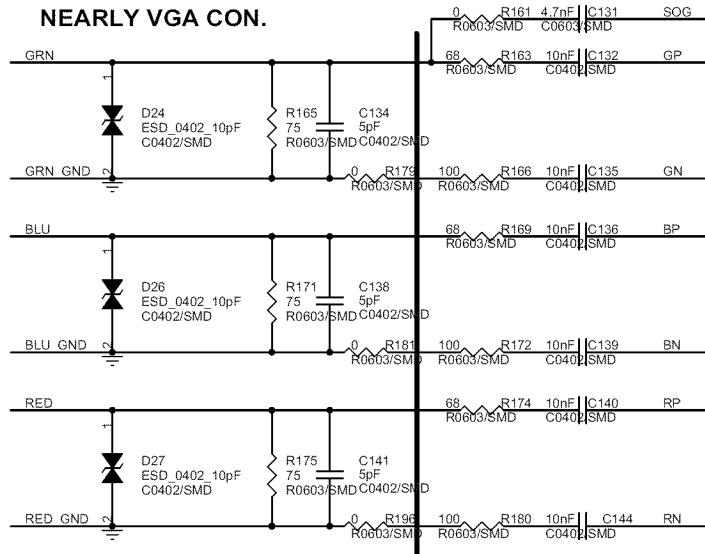


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YPBPR1/DVD_SEL=1::DVD
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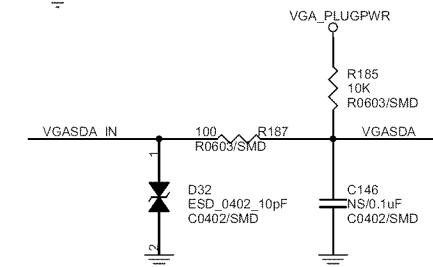
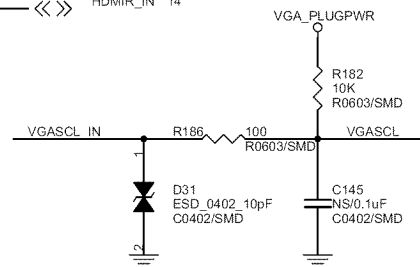
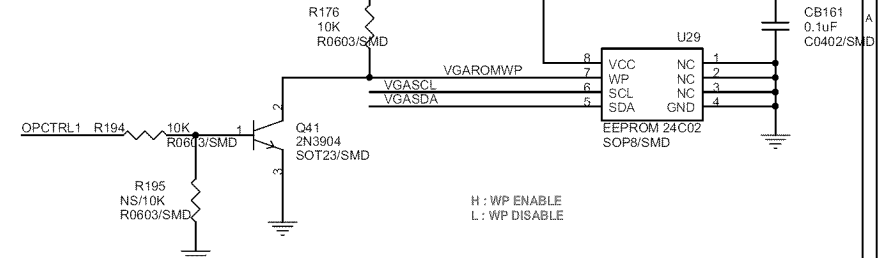
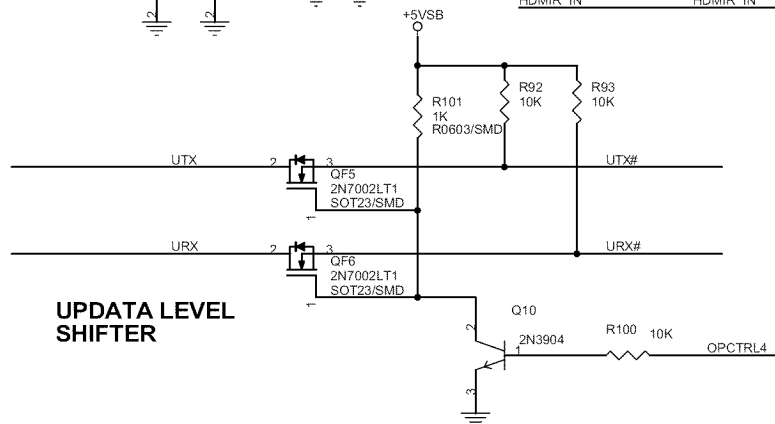
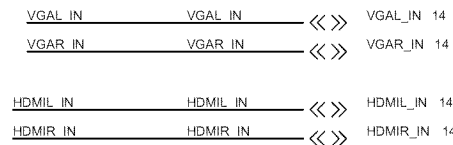
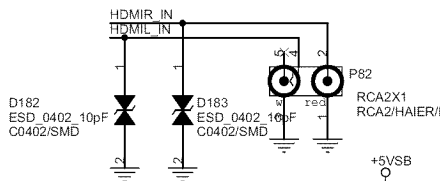
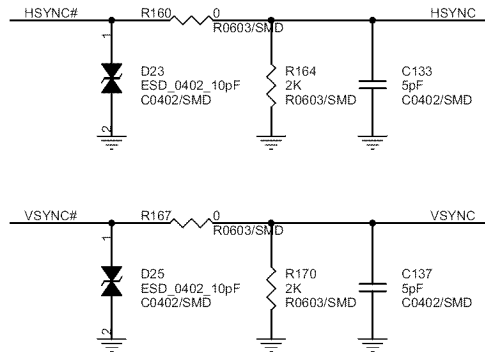
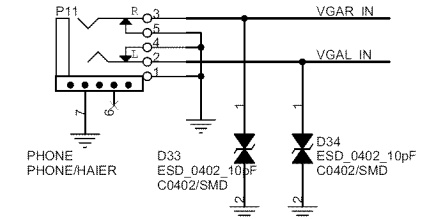
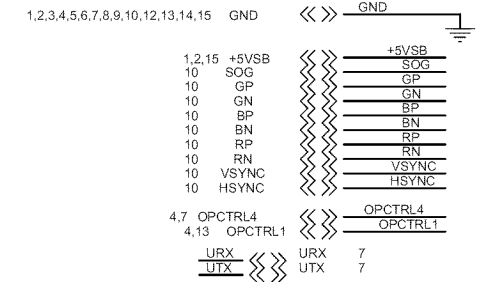
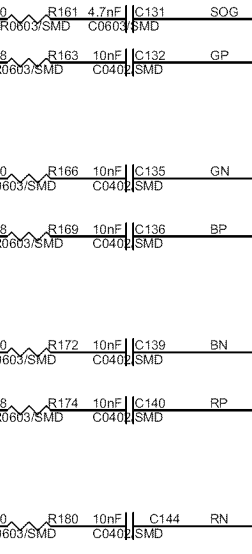


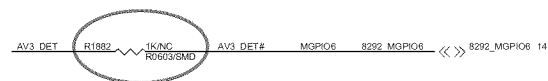
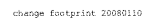
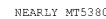
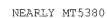
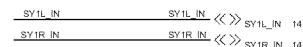
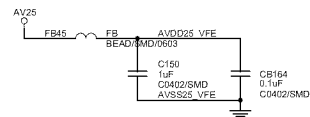
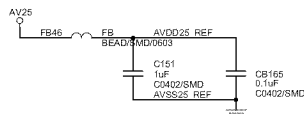
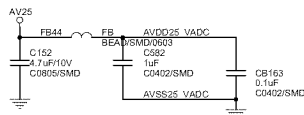
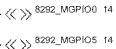
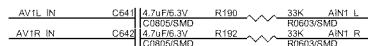
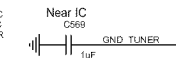


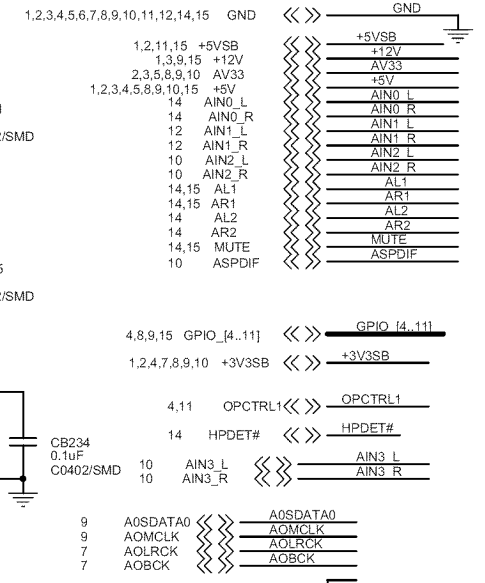
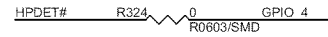
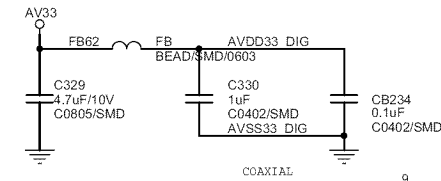
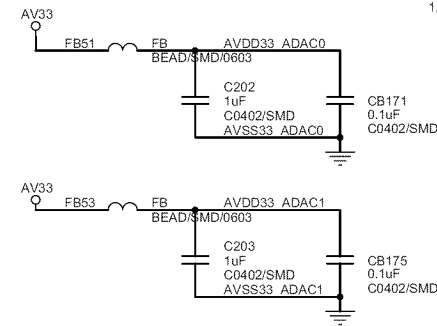
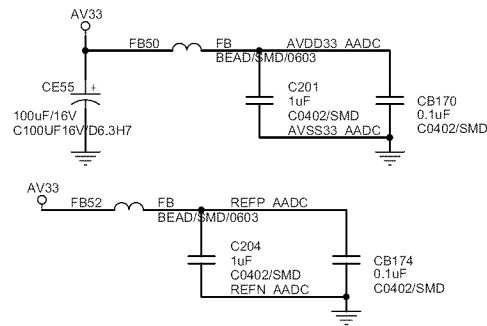
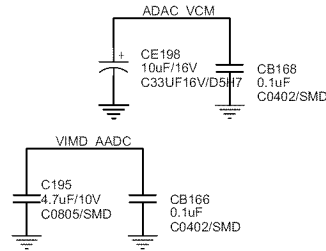
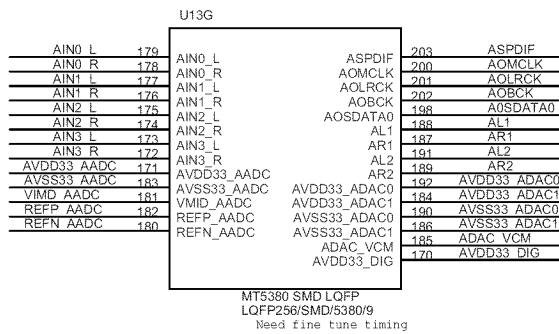
## NEARLY VGA CON.



## NEARLY IC





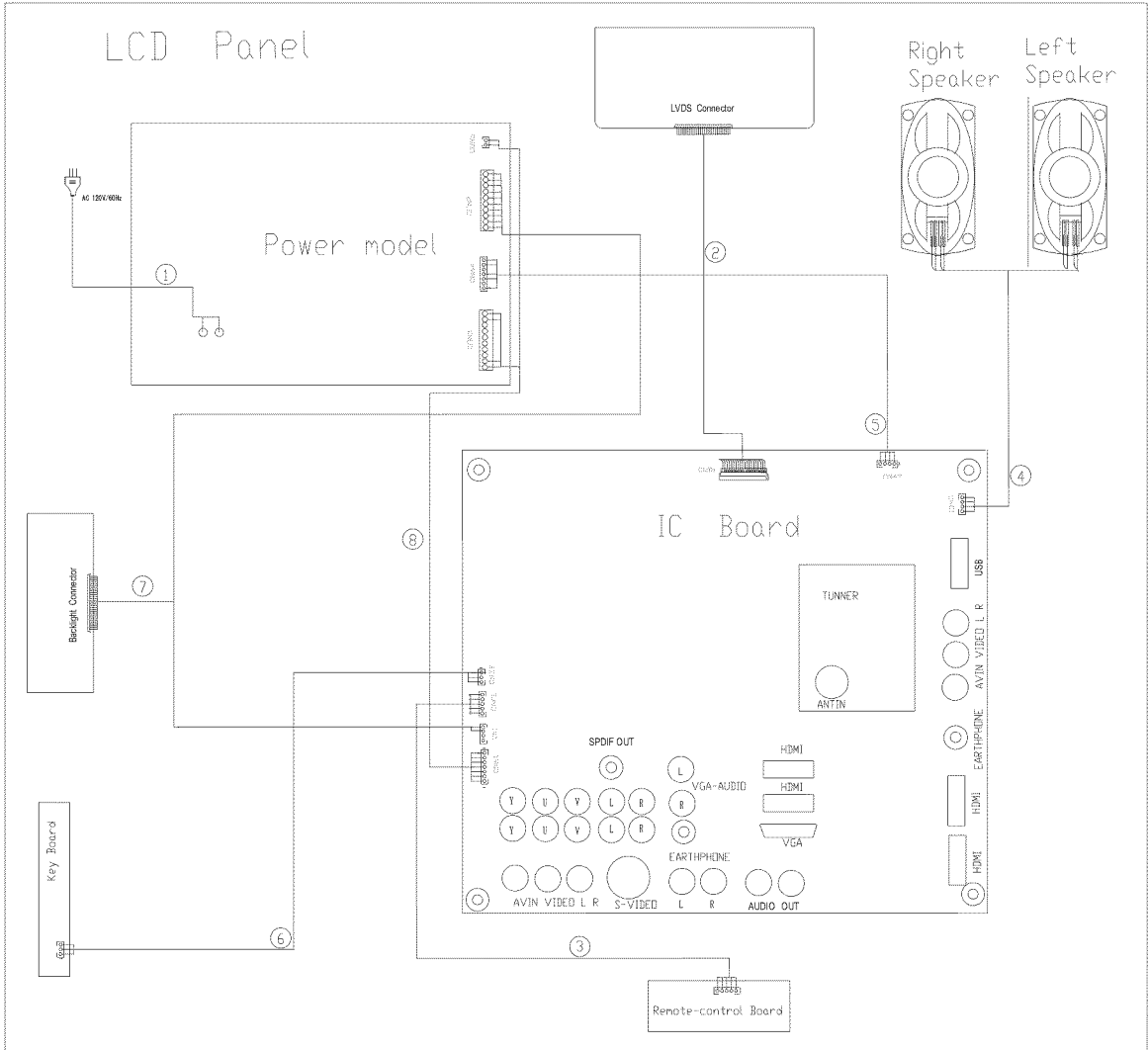






### 7-3 .Wiring Connection Diagram

Customer type	HL42XK1
Factory type	LA42R3
Special number	DC13U0E0101
Special technique document number	AT08SR0415US12
Export country	American
Customer	HAC
HAC	Haier



### Connecting sketch

No.	serial No.	Name
①		power wire
②		LVDS Wire
③		IR Wire
④		Speaker Connecting Wire
⑤		Amplifier power wire
⑥		keypad Wire
⑦		Backlight Wire
⑧		Combine Wire
Date		Sign
		Approve

## 8. Measurements and Adjustments

### 8-1. Service Mode

#### 8-1-1.How to enter into Service Mode

The way to the factory mode menu:

1st, press menu,

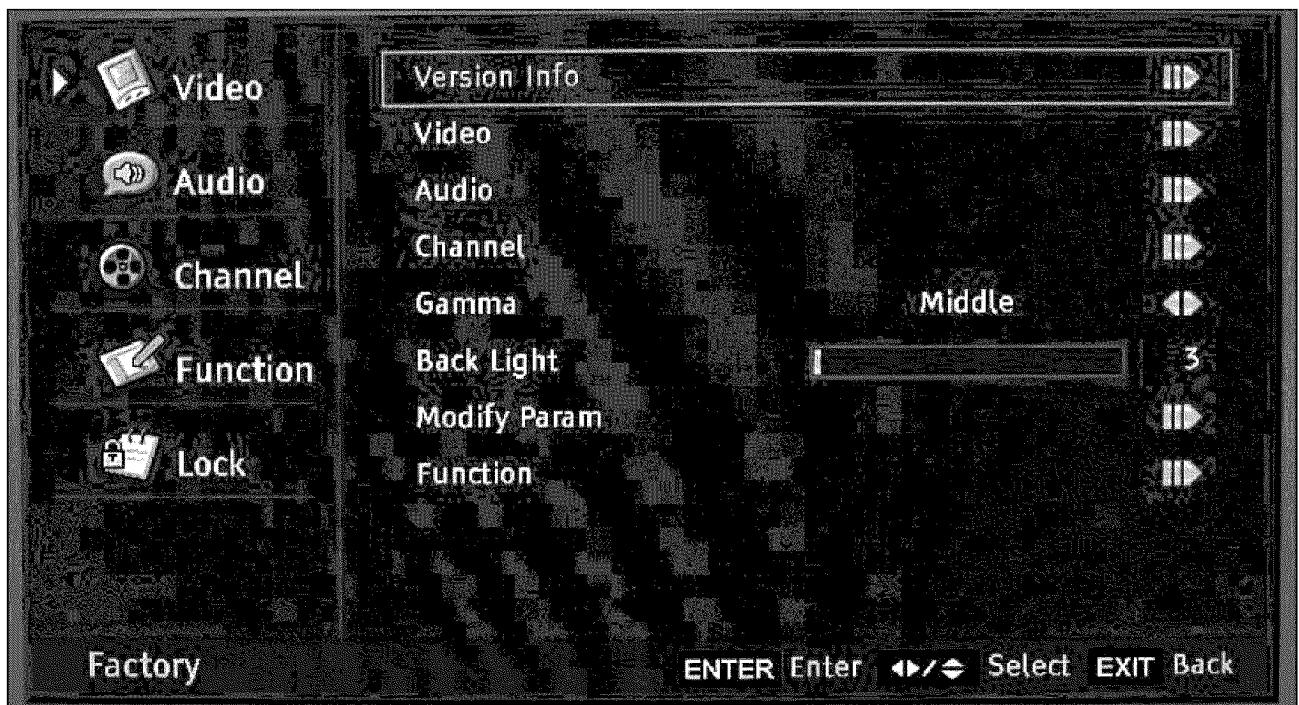
2en, input 8893,

Finished these operations , system will be into the factory mode menu.

#### 8-1-2.How to exit

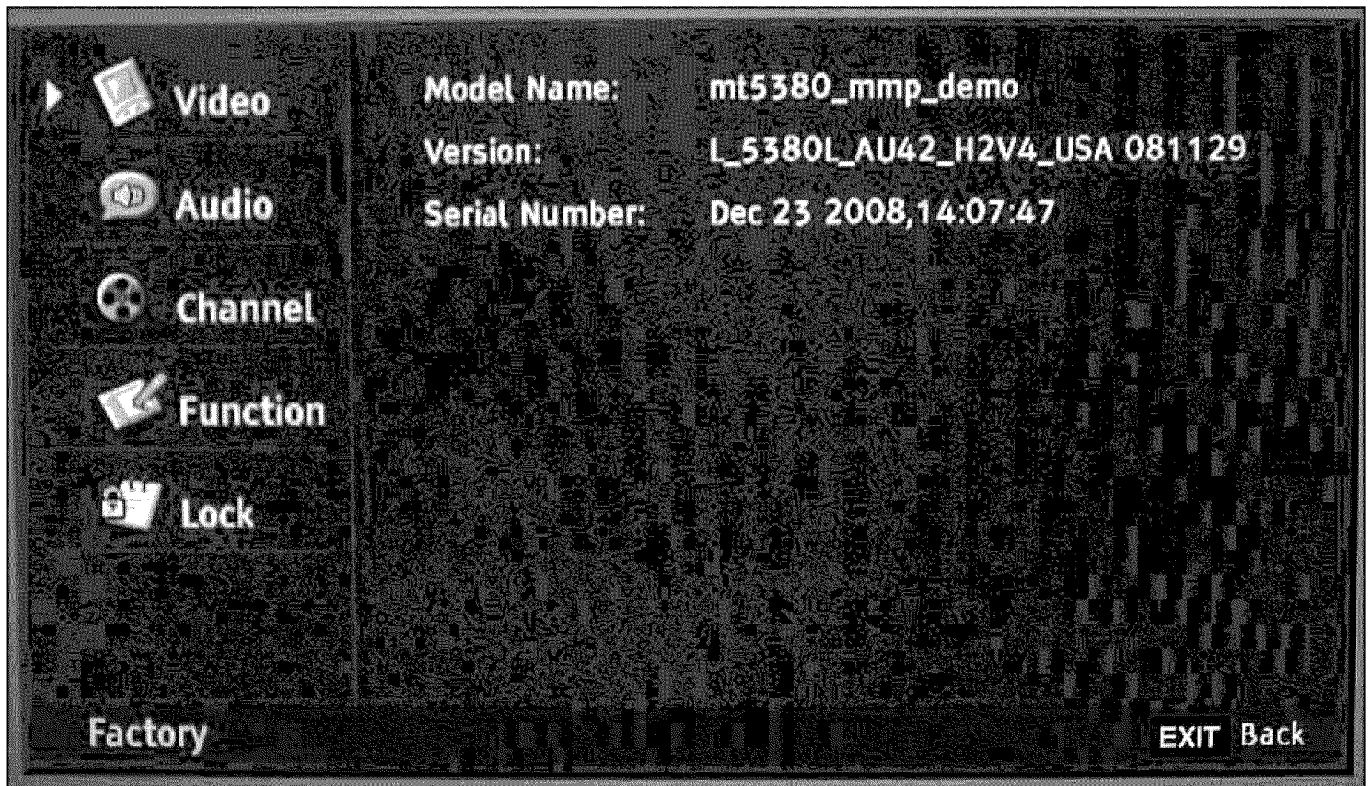
IF want to exit this factory menu,please press the botton"Exit" in the remoter.

### 8-2 Measurements and Adjustments



#### 8-2-1 Version ,S/N, Panel Resoution

Version:The first line is the model Name and the second line is current software version.



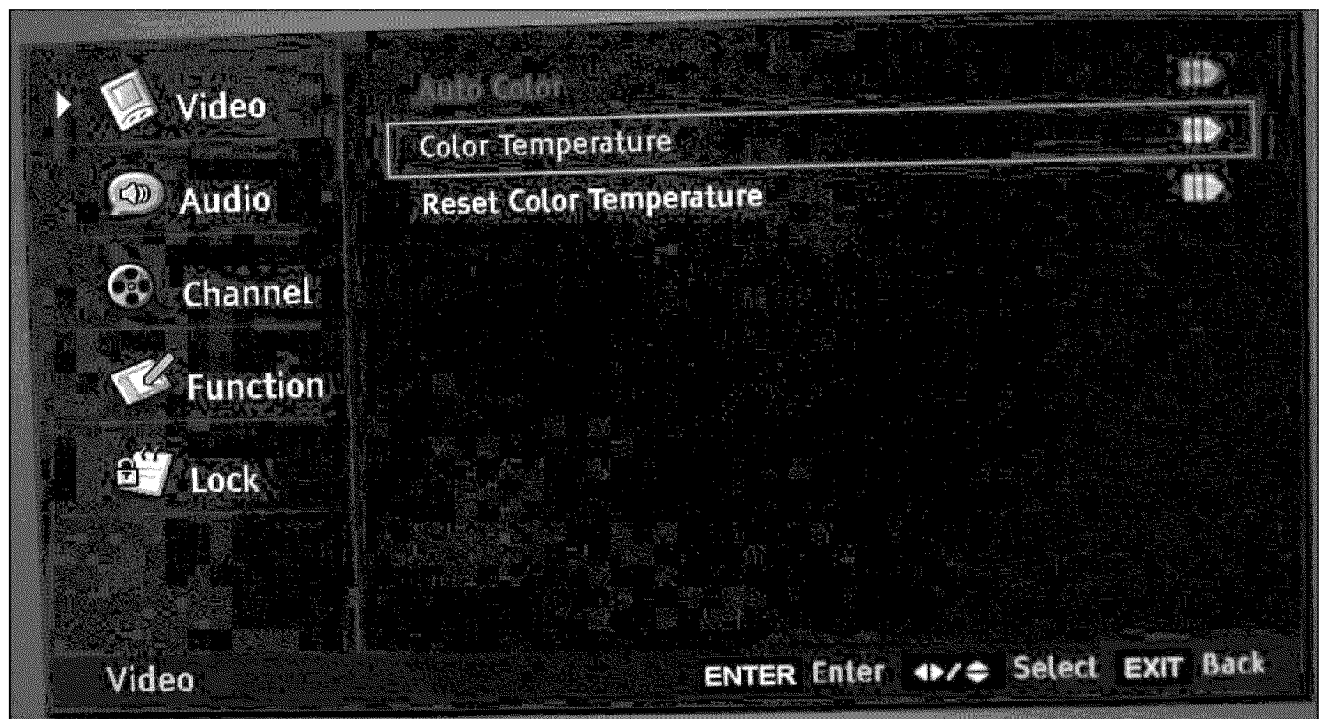
### 8-2-2 Video

Auto Color

The option could only be used in the VGA and Component model. When we found the color in the two models was abnormal. Then we can use the function to adjust it automatically.

Color Temperature

The function could adjust the Color Temperature., used when debugging.



### 8-2-3 Audio

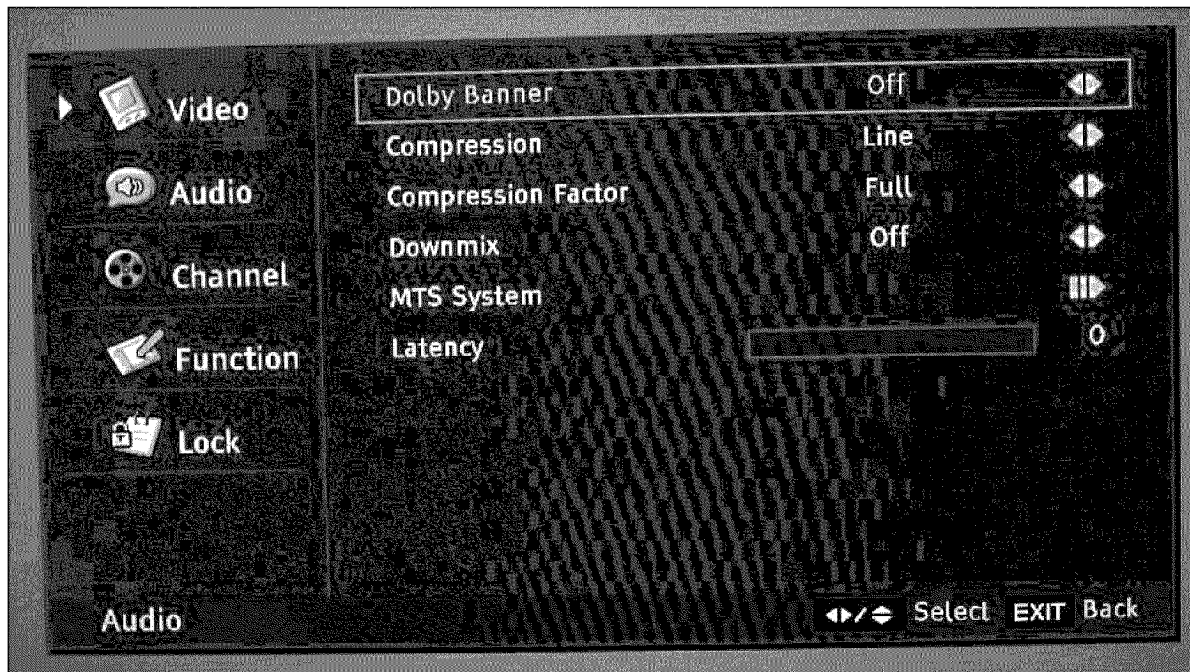
Dolby Banner: When turn it "ON", the model will be in Dolby authentication state.



Compression: Compression style. RF: atv line: AV/S-Video/YPbPr/VGA

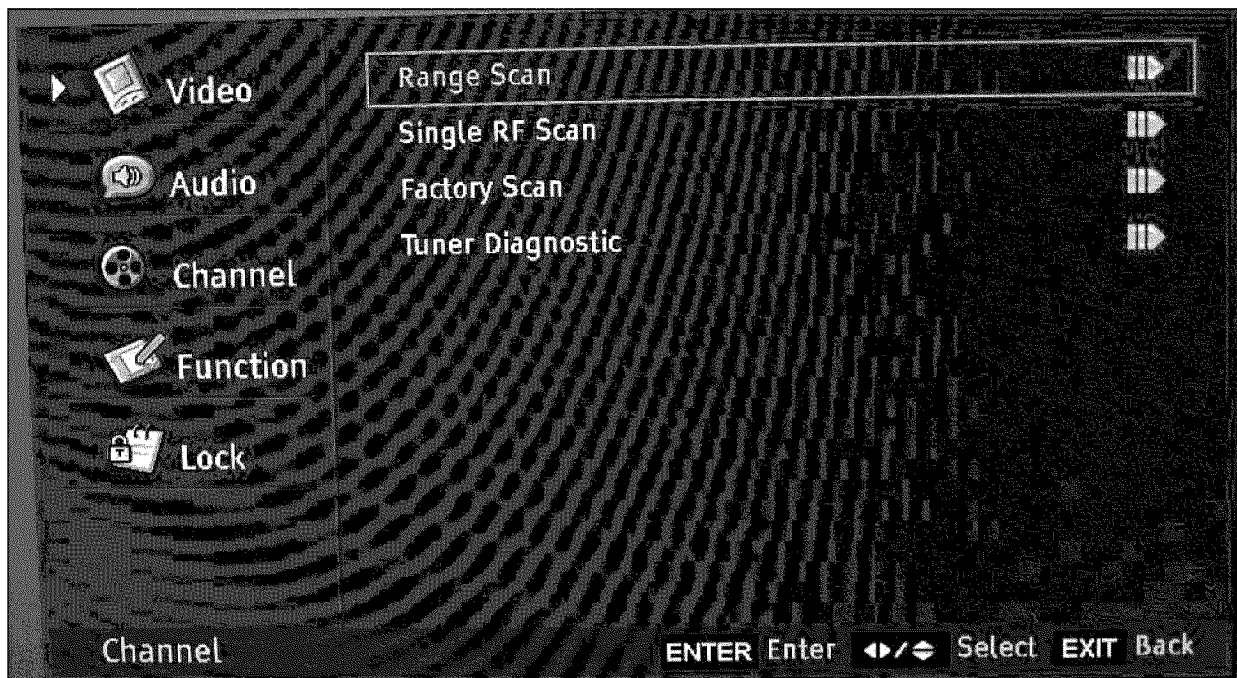
Compression Factor: Compression state.

Downmix: output model. MTS System: used when debugging. The parameters only used when debugging, no need to be modified.

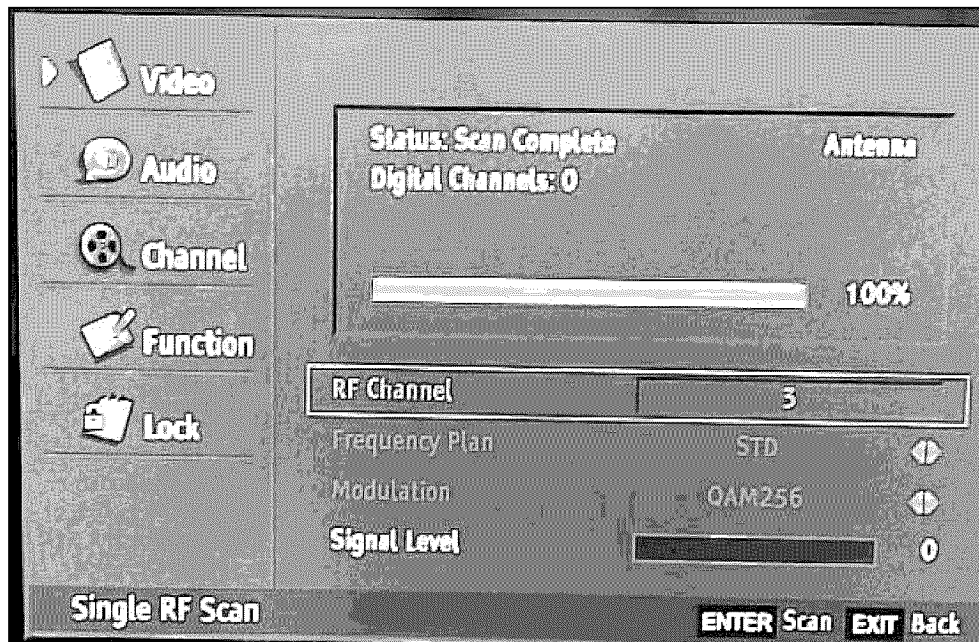


#### 8-2-4 Channel

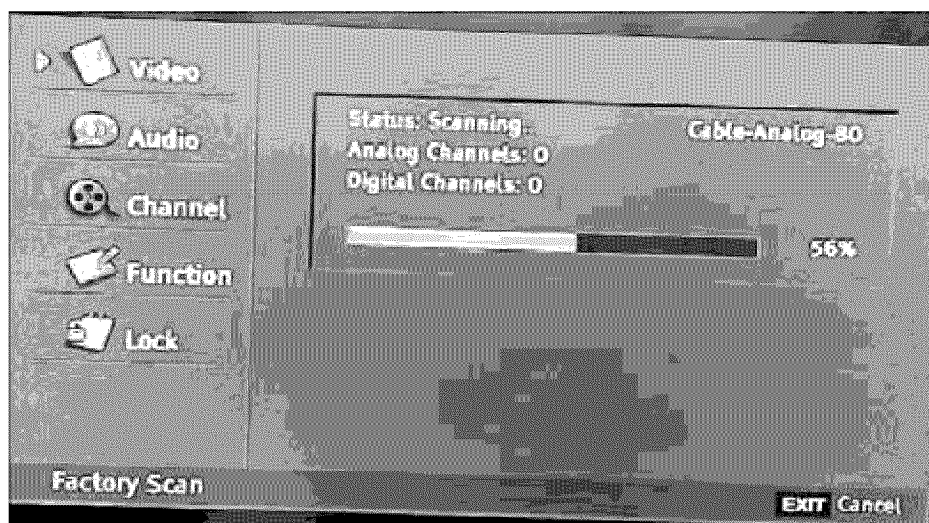
Range Scan: The function could make it to search the channels by differentiation the analog and digital channels.



Single RF Scan: Search channels in the frequency scope set in advance.



Factory Scan: According to ANTENNA-ANALOG---> ANTENNA-DIGITAL---> CABLE-ANALOG---> CABLE- DIGITAL to search channels, used only in project debugging.

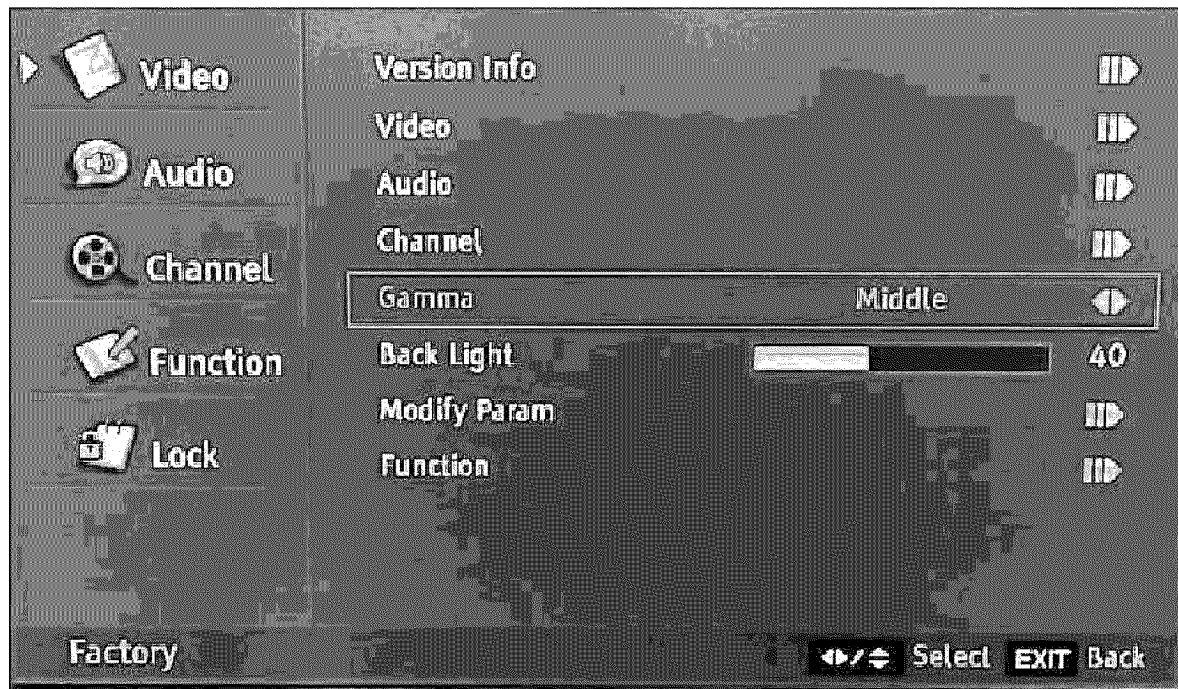


Tuner Diagnostic: Project debugging setting, used to inspect the audio function.

### 8-2-5Gamma

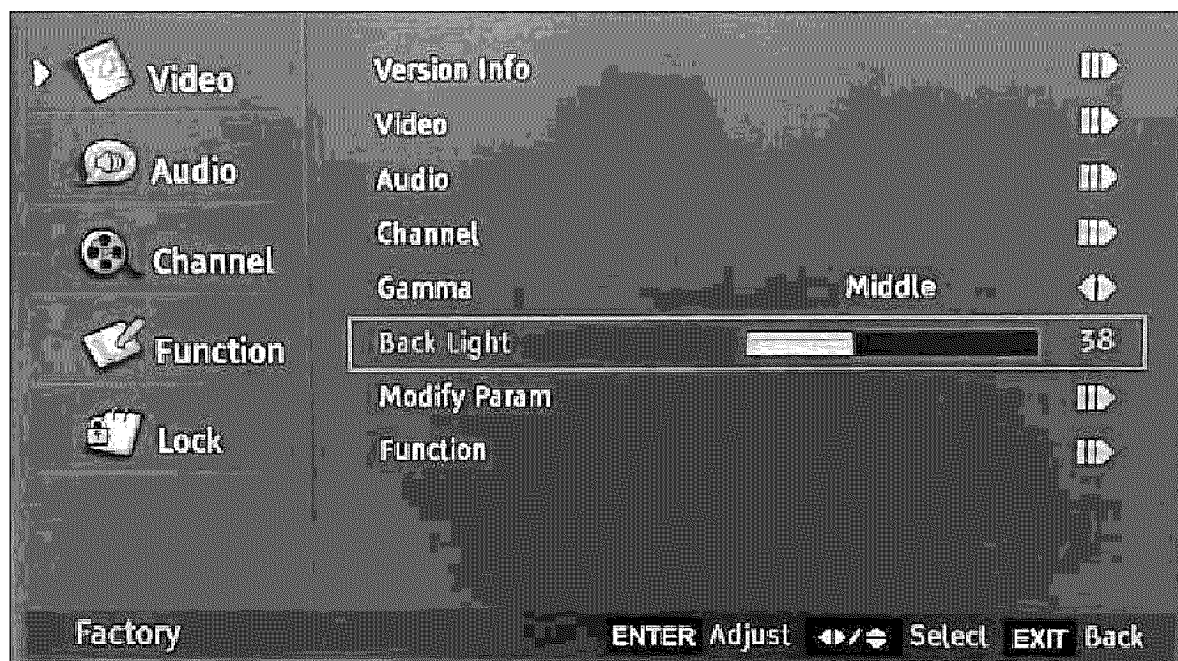
Gamma:

Bright: GAMMA0.8 Middle: default settings in the program Dark: GAMMA1.2



### 8-2-6 Backlight

Backlight: adjust the backlight.

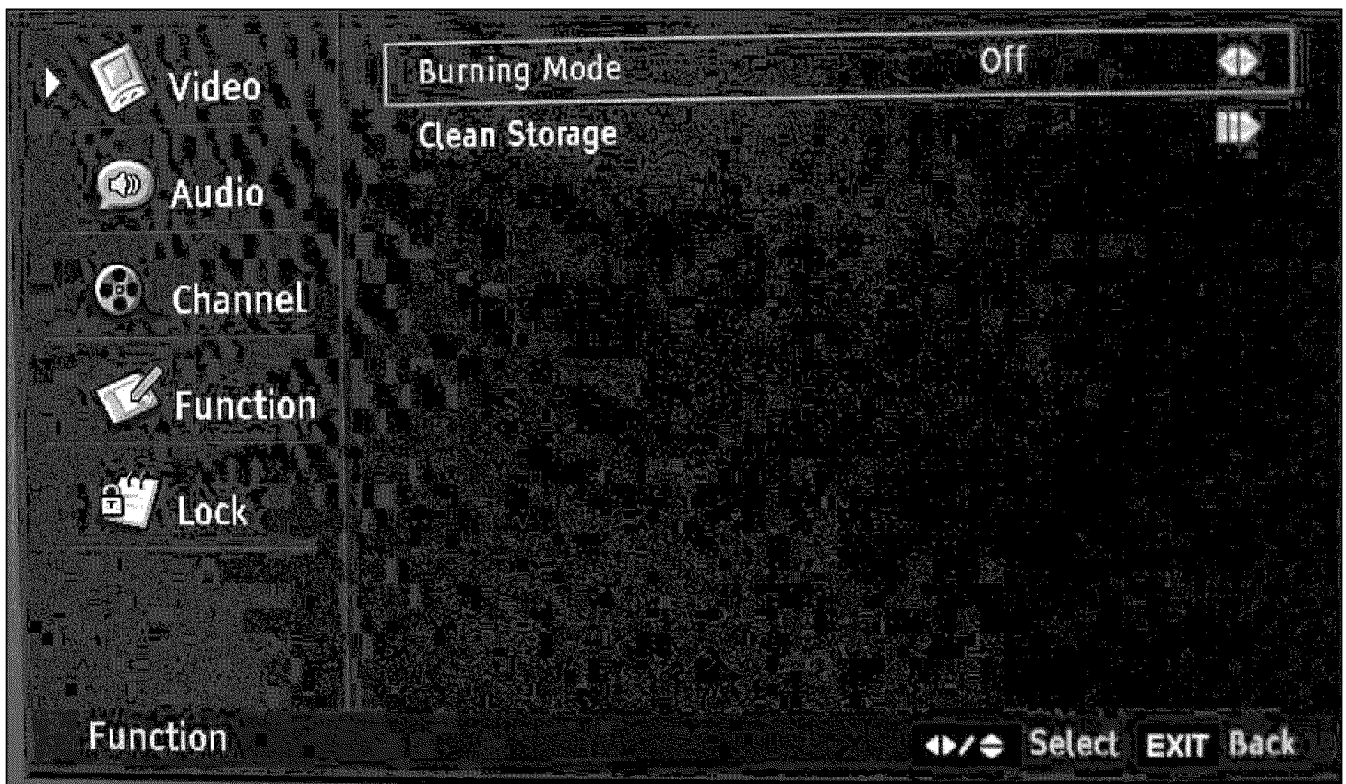


### 8-2-7 Function

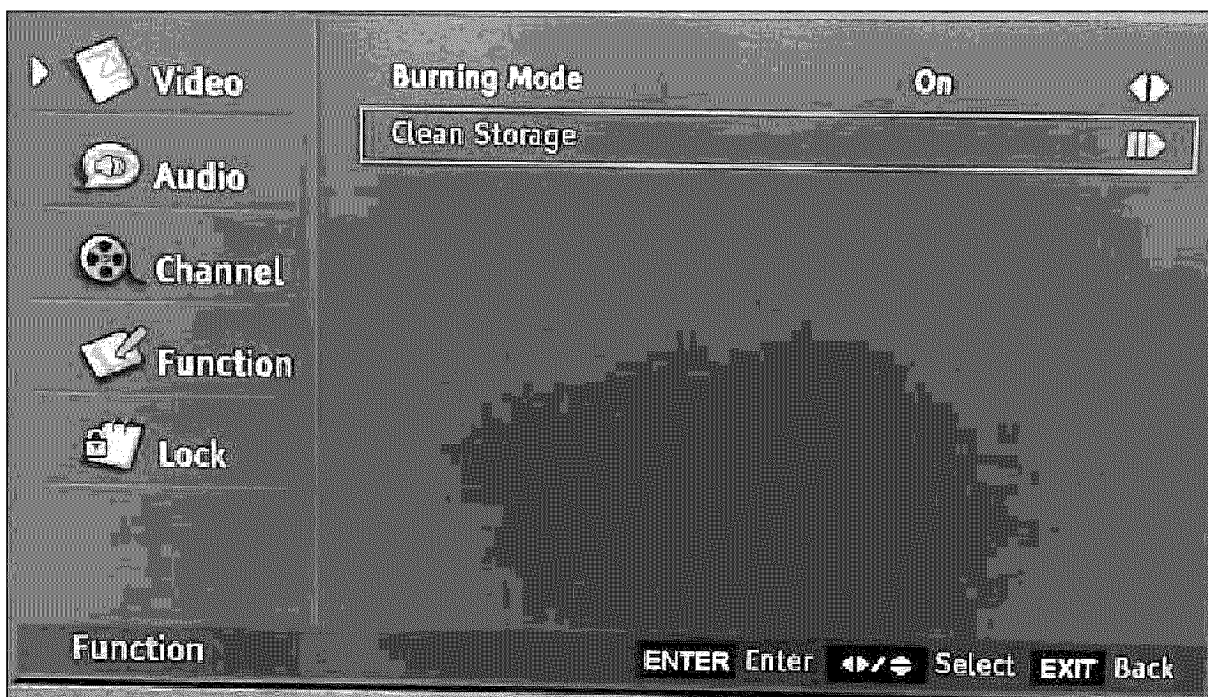
Burning Mode:

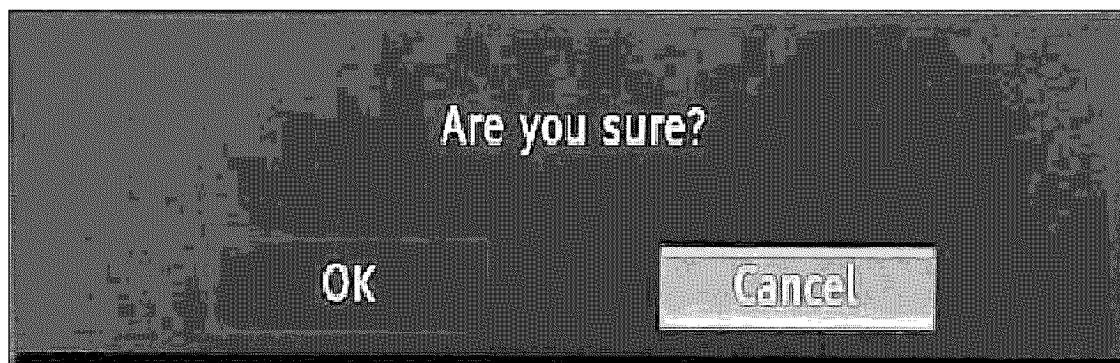
Turn it "ON" to enter the aging model, This is for factory run-in testing. The screen would display red, green, blue and black screen repeatedly. Each color screen could be exam at that time.





Clean Storage: The function could make the model turn back to the factory default setting.





**Remark:**

The date of the chart only is a example, please don't adjust the factory mode base on it.

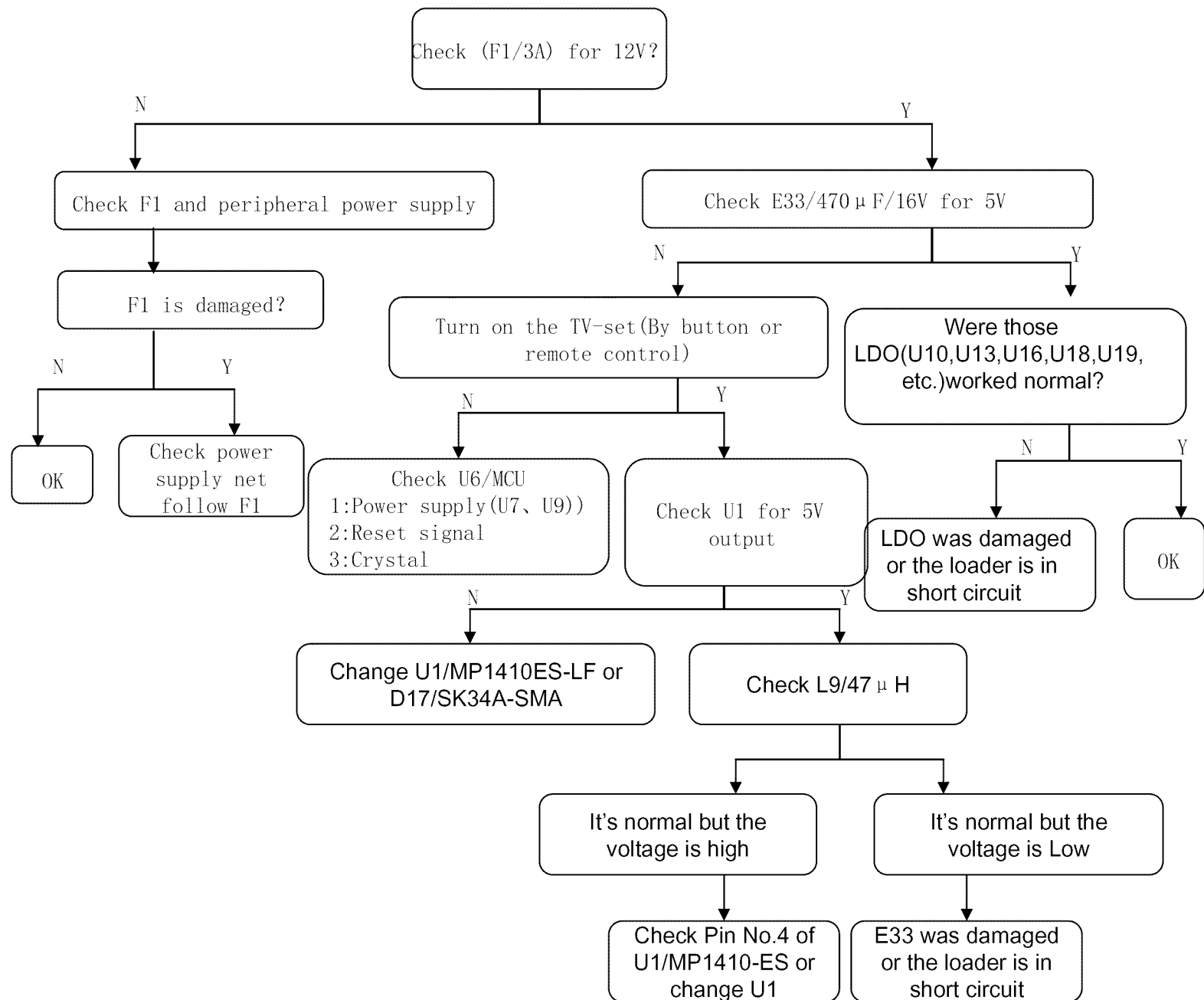
## 9. Trouble shooting

### 9-1. Simple check

No Picture,no sound	Verify if the television is properly plugged Verify if the television is properly supplied power Verify if electricity is available
Blank screen	Verify if correct signals are input Press INPUT button to change signal input to TV input Restart the television of power supply is interrupted
No sound	Press Mute button and verify if Mute mode is set. Switch to otger channel and verify if the same problem happens. Press VOL+ button to see of he problem can be solved.
Poor sound	Verufy if sound system is correct .Refer to some chapter for adjust.
No picture in some channel	Verify if correct channel is selected. Adjust the antenna. Make adjustments by Fine Tune and MANUAL Scan.
No color for some channel program(black and white)	Verify if the same problem exists in other channels. check out of picture and sound system. Refer to relative instructions in the Manual for color adjust.
Spots with some or all pictures	Verify if the antennal is correctly connected. Verify if the antennal is in good condition. Make fine adjustment of channel.

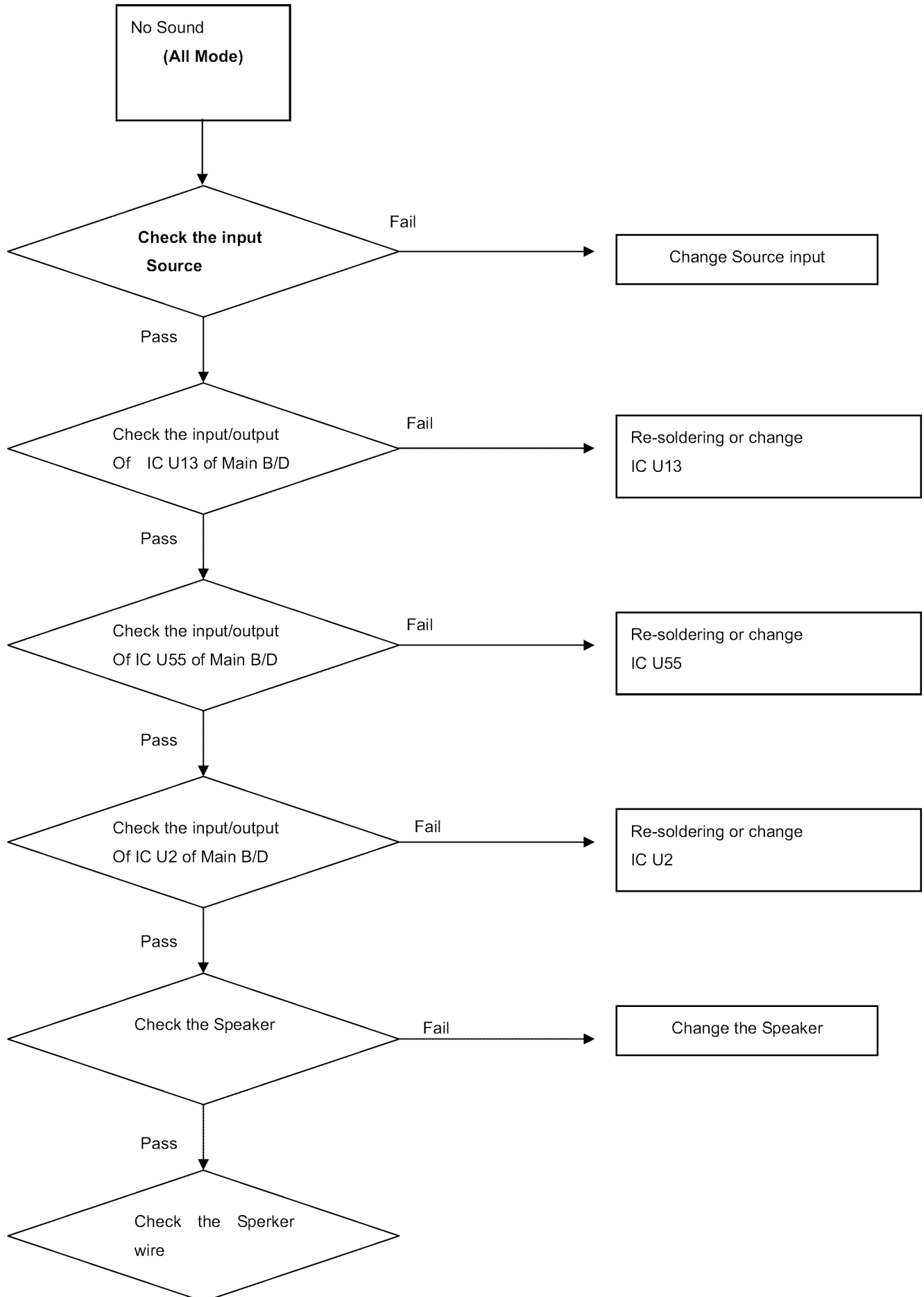
Horiaontal/vertical bars or picture shaking	Check for local interference such as an electrical appliance or power tool.
Television out of control	Disconnect the television from power supply and 10 seconds later, connect the television to the power supply. If the problem still exists, contact authorized after-sales service for technical assistance.

## 9-2. Power Supply Board failure check.

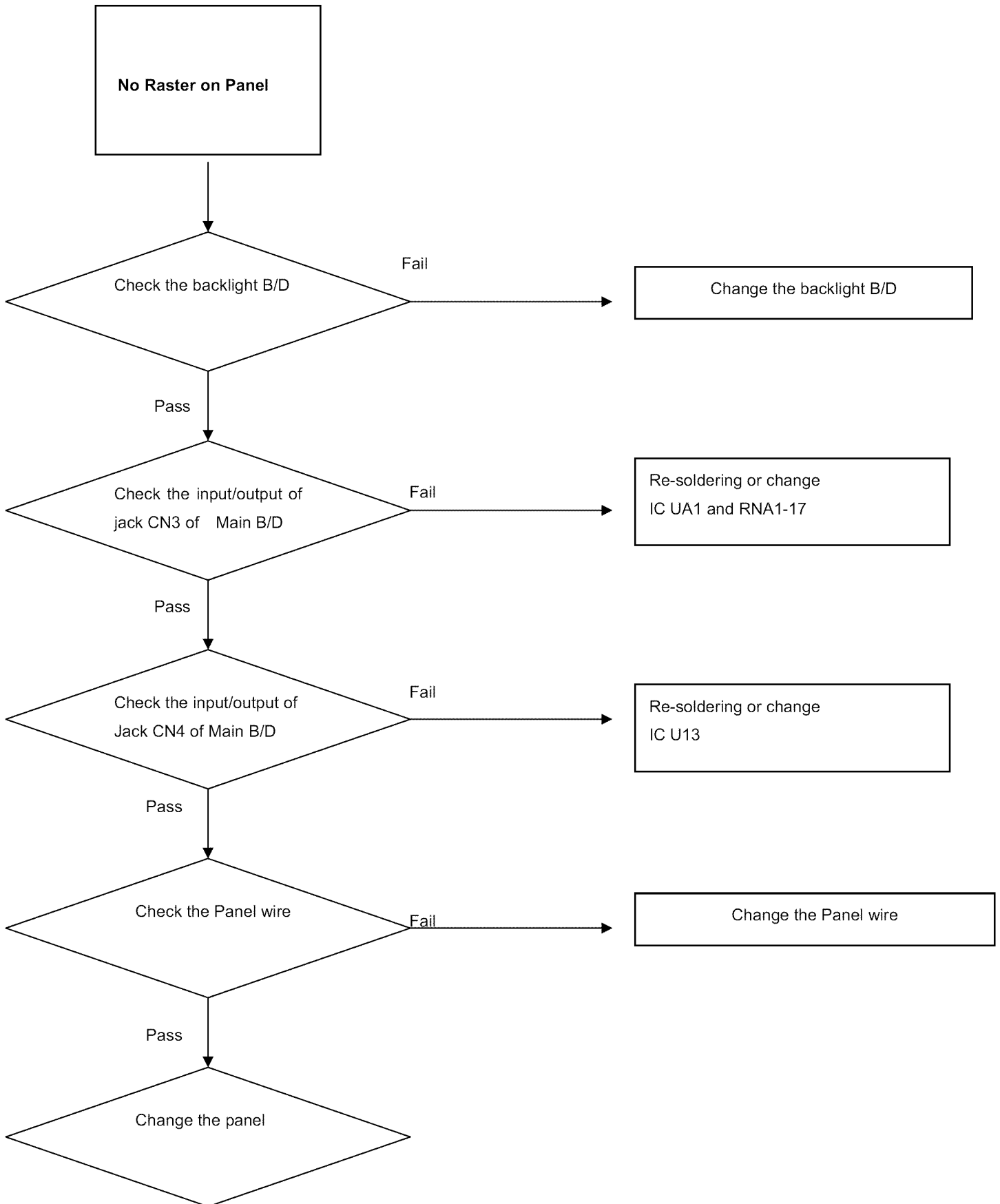


### 9-3. Main board failure check

State: No Sound



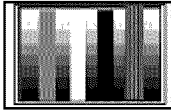
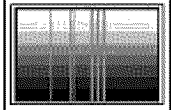
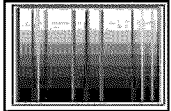


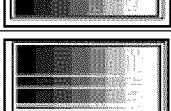
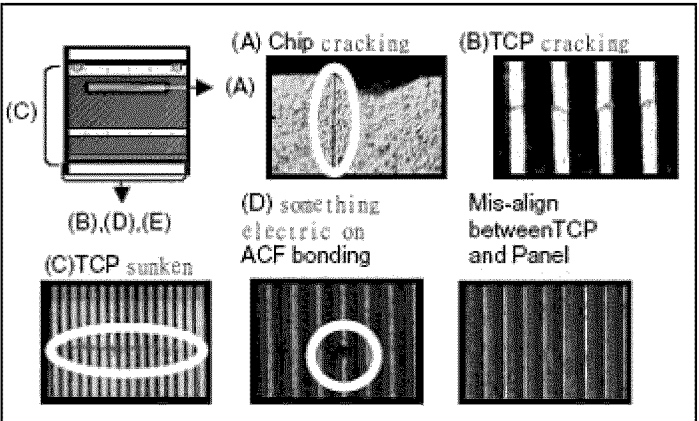
**State: No picture**



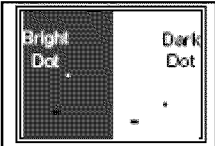
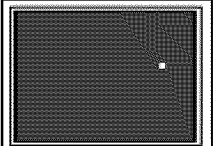
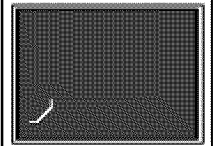
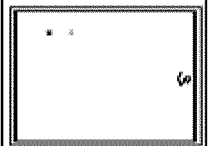


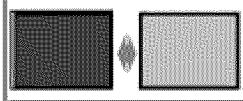
## 9-4. Pannel failure

### Failure Mode


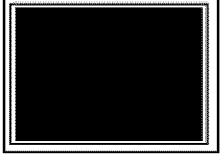
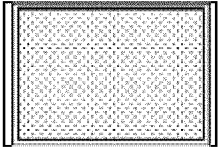
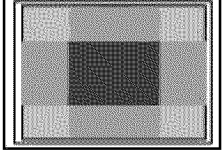
Part	Name	Description	Phenomena	Failure cause
TCP	V B/D	Vertical bar		Block Defect :TCP cracking or cracking Dim or L/D :TCP Sunken :TCP lead cracking :ACF bonding short :Awful environment and something electric enter into LCD :Mis-align between TCP and Panel :Panel failure :TCP failure
	V Dim	Vertal gray line		
	V L/D	Vertical color line(light or dark forever)		
	H B/D	Horizontal bar		
	H Dim	Horizontal gary line		
	H L/D	Horizontal line(light or dark forever)		
				

### Failure Mode

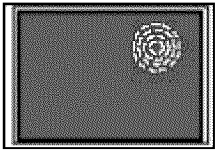
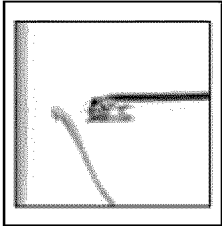
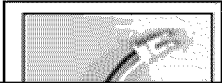
Part	Name	Description	Phenomena	Failure cause
Panel or Polarizer	Dot Defect	Bright dot dark dot in pannel		Incoming Inspection Standard
	Polarizer Bubble	Bladder in Polarizer		Bladder between Polarizer and top glass
	Polarizer Scratch	Polarizer Scratch		Tine or rigidity arose
	F/M inside Polarizer	Eyewinker inside Polarizer		Eyewinker inside Polarizer
Circuit	Abnormal Display	Abnormal Display		1.Chip lose action 2.IC ahort or jointiog bad


	Flashing	Bright and dark display alternately		3. Panel and vsc connect bad
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### Failure Mode

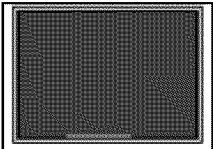
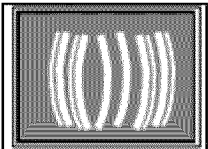
Part	Name	Description	Phenomena	Failure cause
Circuit	White Screen	B/L normal, only white screen display		Maybe caused by surge current and EDS
	Black Screen	B/L normal, only Black screen display		
	Flicker	Crosstalk		LCD Vcom imbalance
	Abnormal Color	Only abnormal color		Capacitance improper bring crosstalk inside LCD panel
	Abnormal Color	Only abnormal color		1. Chip lose action 2. IC short or joint bad 3. Panel and vsc connect bad

### Failure Mode

Part	Name	Description	Phenomena	Failure cause
	Mechanical Noise	When turn panel, appear cacophony		Caused by Mechanical noise of backlight unit
	Ripple	Concentric circle		Caused by between mechanism and panel
	B/L off	B/L lose action		*Connect badness between wire and electrode
	B/L dark	B/L brightness darker than normal		*Connect badness Short between wire and electrode
	B/L wire damaged	B/L wire damaged		Operation abnormal or systemic noise

	B/L wire open	Without backlight		Operation abnormal or systemic noise
	B/L shut down	B/L shutdown in sometime		Short between lamp housing and wire, Because consume power too much
	F/M	F/M in B/L, white, black Rotundity or wirelike		F/M in B/L unit

## Failure Mode

Part	Name	Description	Phenomena	Failure cause
Mechanical or B/L	Light leakage	Brightness at bottom of LCM brighter than normal		B/L unit badness
	Uniformity	B/L brightness asymmetric		Sheet in B/L unit is uneven
	Mount hole	Lack screw or screw damage		*Lack screw Screw damage

# **Sincere Forever**